2001

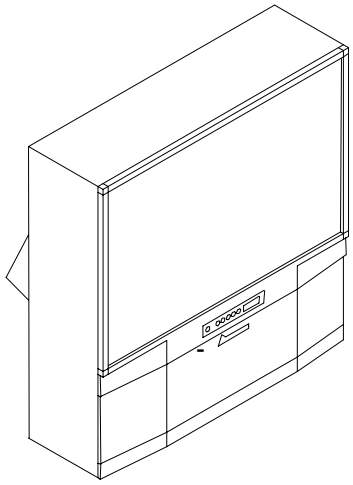
MITSUBISHI ELECTRIC

Service Manual

PROJECTION TELEVISION
VZ9 / VZ9+ CHASSIS

VZ9 MODELS

VS-45609
VS-50609
VS-55609
VS-60609



VZ9+ MODELS

VS-60719
VS-70709

CAUTION:
Before servicing this chassis, it is important that the service person read the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" contained in this manual.

SPECIFICATIONS

- **Power Input** : AC 120V, 60Hz
- **Power Consumption** : 200W
- **Frequency Range** : VHF 54 ~ 470MHz
  UHF 470 ~ 806MHz
- **Antenna Input** : VHF/UHF 75Ω unbalanced
  Single axis input
- **CRT Size** : 7"
- **High Voltage** : 32.0kV (at 0A)
- **Speaker** : [VZ9]
  4" round type, full range 2 pcs.
  (8Ω 10W)
  [VZ9+]
  5" round type, full range 2 pcs.
  (8Ω 10W)
- **Weight** : [VS-45609] 176 lbs
  [VS-50609] 198 lbs
  [VS-55609] 229 lbs
  [VS-60609] 259 lbs
  [VS-60719] 253 lbs
  [VS-70709] 369 lbs
- **Cabinet Dimensions** : [Model] (H)x(W)x(D)
  : [VS-45609] 48"x38.4"x22.2"
  : [VS-50609] 50.4"x42.8"x23.8"
  : [VS-55609] 54.8"x46.4"x23.7"
  : [VS-60609] 60.8"x50.6"x29"
  : [VS-60719] 60.8"x50.6"x29"
  : [VS-70709] 70.5"x58.7"x29.4"
- **Input Level** : VIDEO IN JACK (RCA Type)
  1.0Vp-p 75Ω unbalanced
  : AUDIO IN JACK (RCA Type)
  -4.7dBm 43kΩ unbalanced
  : S-VIDEO IN JACK
  (Y/C separate type)
  Y:1.0 Vp-p C:0.286Vp-p(BURST)
  75Ω unbalanced
  : Component Inputs (RCA Type)
  Y: 1.0Vp-p
  Cr, Cb: 700mVp-p
- **Output Level** : VIDEO OUT JACK (RCA Type)
  1.0Vp-p 75Ω unbalanced
  : AUDIO OUT JACK (RCA Type)
  -4.7dBm 4.7kΩ unbalanced

- Weight and dimensions shown are approximate.
- Design specifications are subject to change without notice.

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INTRODUCTION

This service manual provides service instructions for PTV Models VS-45609, VS-50609, VS-55609 and VS-60609 which use the VZ9 chassis, and PTV Model VS-60719 and VS-70709 which use the VZ9+ chassis. Service personnel should read this manual thoroughly before servicing these chassis.

This service manual includes:

1. Assembly and disassembly instructions for the front and rear cabinet components.
2. Servicing of the Lenticular Screen and Fresnel Lens.
3. Servicing printed circuit boards (PCBs).
4. CRT replacement procedure.
5. Electrical adjustments.
6. Chip parts replacement procedures.
7. Circuit path diagrams.

The parts list section of this service manual includes:

1. Cabinet and screen parts.
2. Electrical parts.

Schematic and block diagrams of the above listed models are included in this service manual for better understanding of the circuitry. PCB drawings are also included for easy location of parts and test points.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have special safety characteristics are identified in this service manual.

Electrical components having such features are identified by shading on the schematic diagram and by **bold type** in the parts list of this service manual. **The replacement for any safety part should be identical in value and characteristics.**

SAFETY PRECAUTIONS

NOTICE: Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING:

1. Operation of this receiver outside the cabinet or with the cover removed presents a shock hazard from the receiver's power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
2. Do not install, remove or handle the picture tubes in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

X-Radiation warning

The surface of the cathode ray tubes (CRTs) may generate X-Radiation, so take proper precautions when servicing. It is recommended that a lead apron be used for shielding while handling the CRT. Use this method if possible.

When replacing the CRTs, use only the designated replacement part since it is a critical component with regard to X-Radiation. High voltage must be set as prescribed under the section titled Electrical Adjustments.

Leakage current check

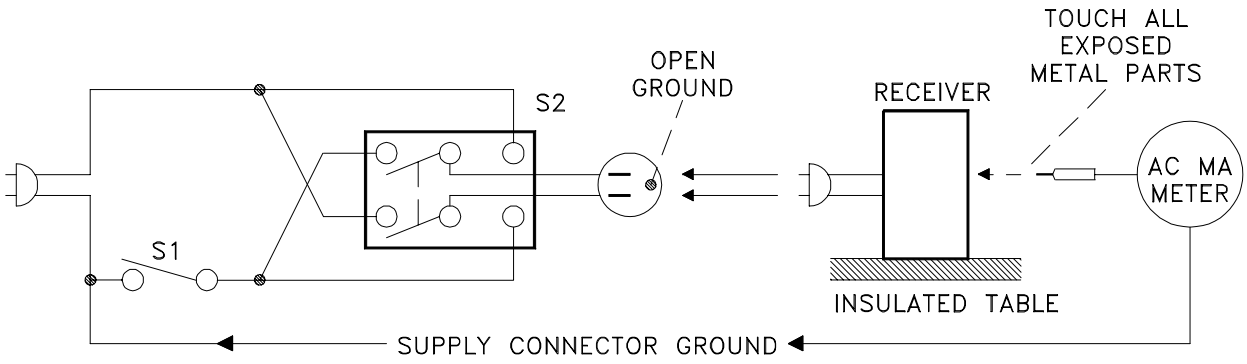
Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. *Cold Check*

   With the alternating current (AC) plug removed from the AC source, place a jumper across the two AC plug prongs. Connect one lead of an ohm meter to the AC plug and touch the other lead to each exposed metal part (i.e. antennas, handle bracket, metal cabinet, screw heads, metal overlay, control shafts, etc.), particularly any exposed metal part that has a return path to the chassis. The resistance of the exposed metal parts having a return path to the chassis **should be a minimum of 1Mega Ohm**. Any resistance below this value indicates an abnormal condition and requires corrective action.

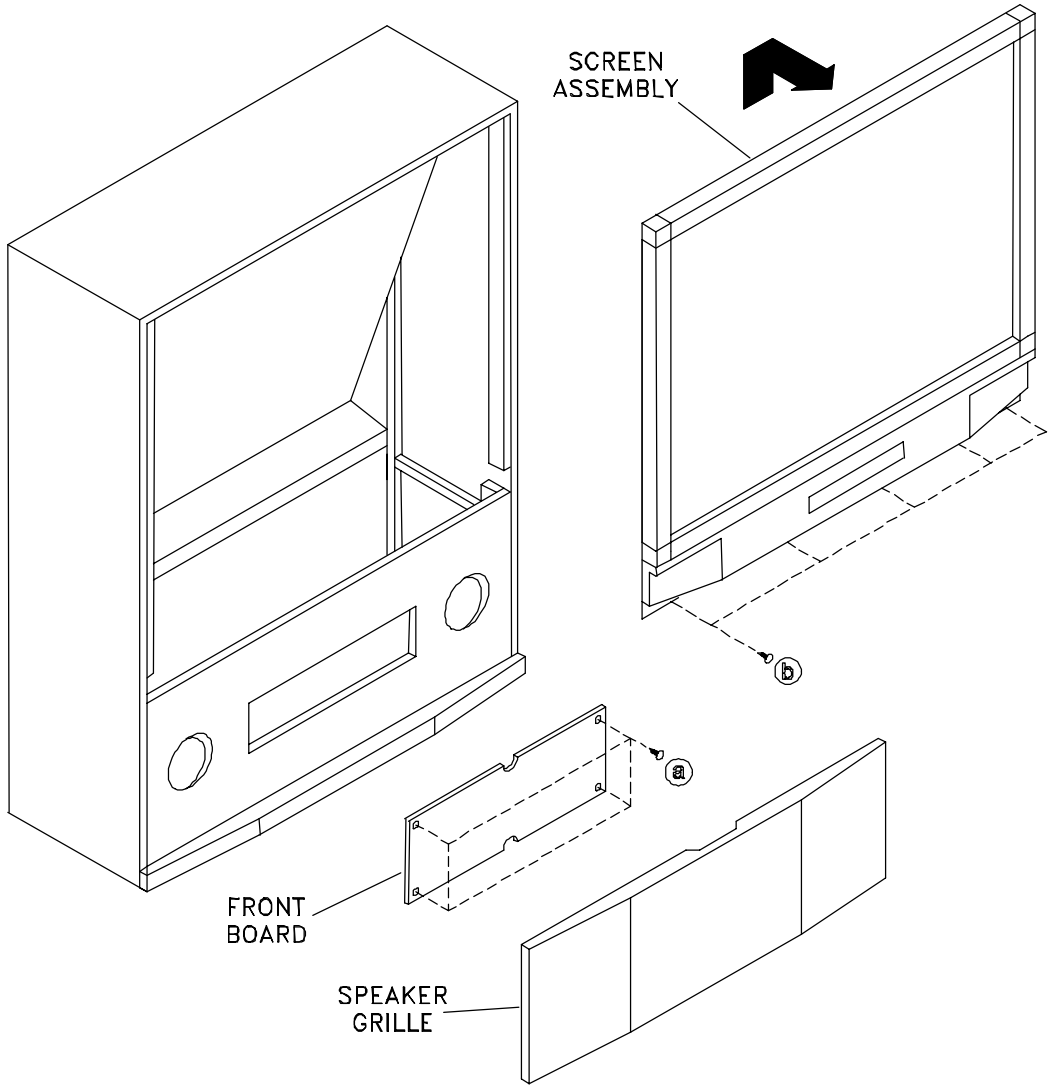
2. *Hot Check ...Use the circuit shown below to perform the hot check test.*

   1. Keep switch S1 open and connect the receiver to the measuring circuit. Immediately after connection, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2.
   2. Close switch S1, energizing the receiver. Immediately after closing switch S1, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2. Repeat the current measurements of items 1 and 2 after the receiver has reached thermal stabilization. **The leakage current must not exceed 0.5 milliampere (mA).**



CABINET DISASSEMBLY (FRONT VIEW)

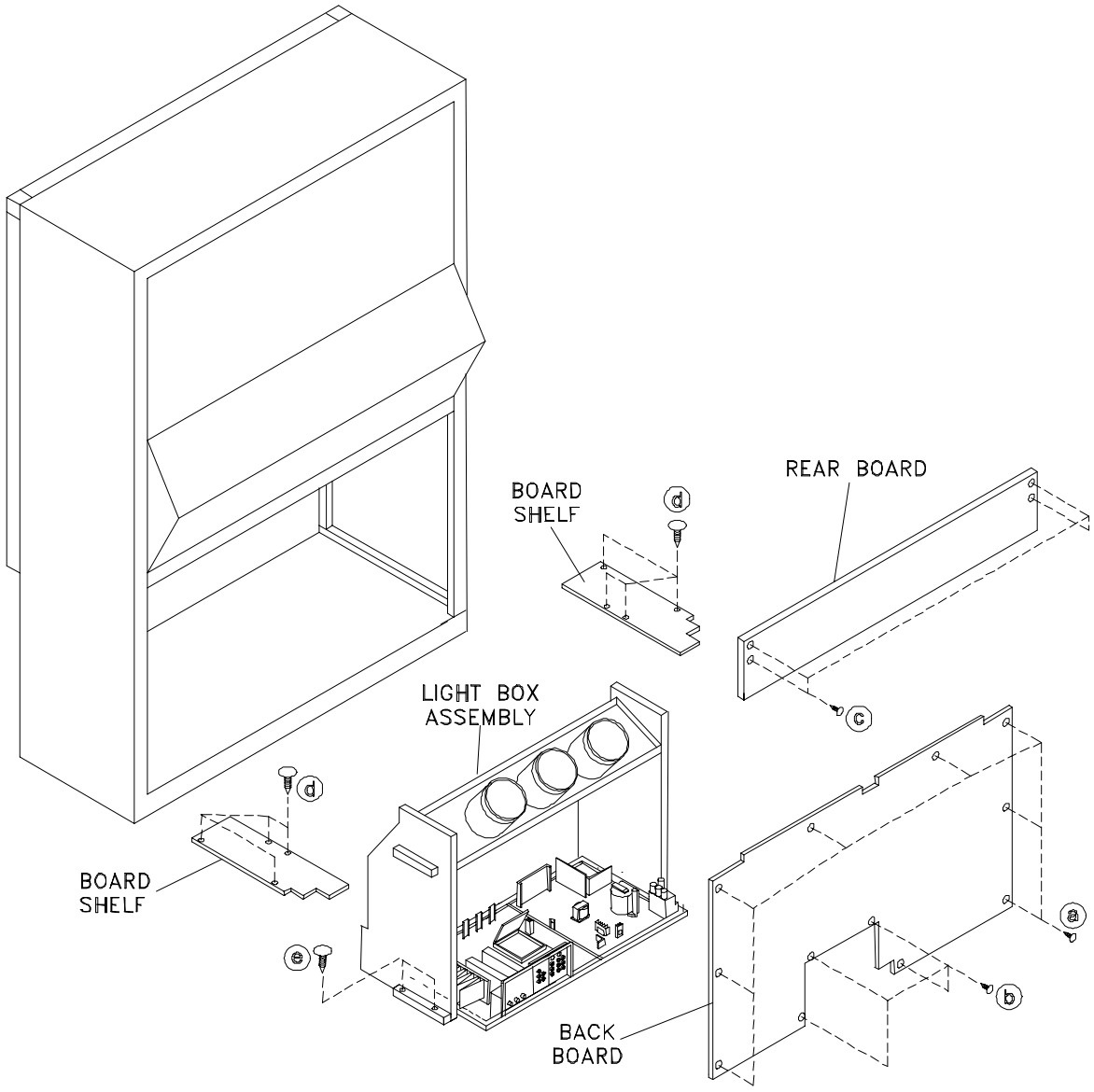
***Refer to PARTS LIST for Part Numbers**



1.Front Cabinet Disassembly

1. Remove the Speaker Grille by pulling forward.
2. Remove the Front-Board by removing 4 screws "a".
3. Remove the Screen Assembly by removing screws "b". Disconnect all cable harnesses between the Screen Assembly and the PCB-Signal.
4. Lift the Screen Assembly and pull up and away from the cabinet as shown.

CABINET DISASSEMBLY (REAR VIEW)



2. Rear Cabinet Disassembly

1. Remove the Back Board by removing 8 screws "a" and 4 screws “b”.
2. Remove the Rear Board-1 by removing 4 screws "c".
3. Remove 4 screws "e" (two not shown) and 8 screws "d" securing the Light Box Assembly and the Board Shelves.
4. Remove the Board Shelves by lifting up and out.
5. Be certain that all cables and connectors between the Light Box Assembly and external items are disconnected (e.g. speaker plugs).
6. Slide the Light Box Assembly out of the cabinet.

SERVICING THE LENTICULAR SCREEN AND FRESNEL LENS

1. Removal of the Lenticular Screen and Fresnel Lens

CAUTION: **Wear gloves** when handling the Lenticular Screen and the Fresnel Lens. This prevents cuts and finger prints. **Do not place the Fresnel Lens in the sun**. This may cause fire and heat related injuries.

1. Remove the screen assembly as shown in the Cabinet Disassembly procedure. [Figure 1-1]
2. Remove the Screen Holder by removing screws (a). [Figure 3-1]
3. Slide the Lenticular Screen and Fresnel Lens from the Screen Frame.

Note: When separating the Lenticular Screen from the Fresnel Lens, use caution while prying the Screen and Lens apart. Use a slot type screw driver, and remove the pressure sensitive, double sided tape.

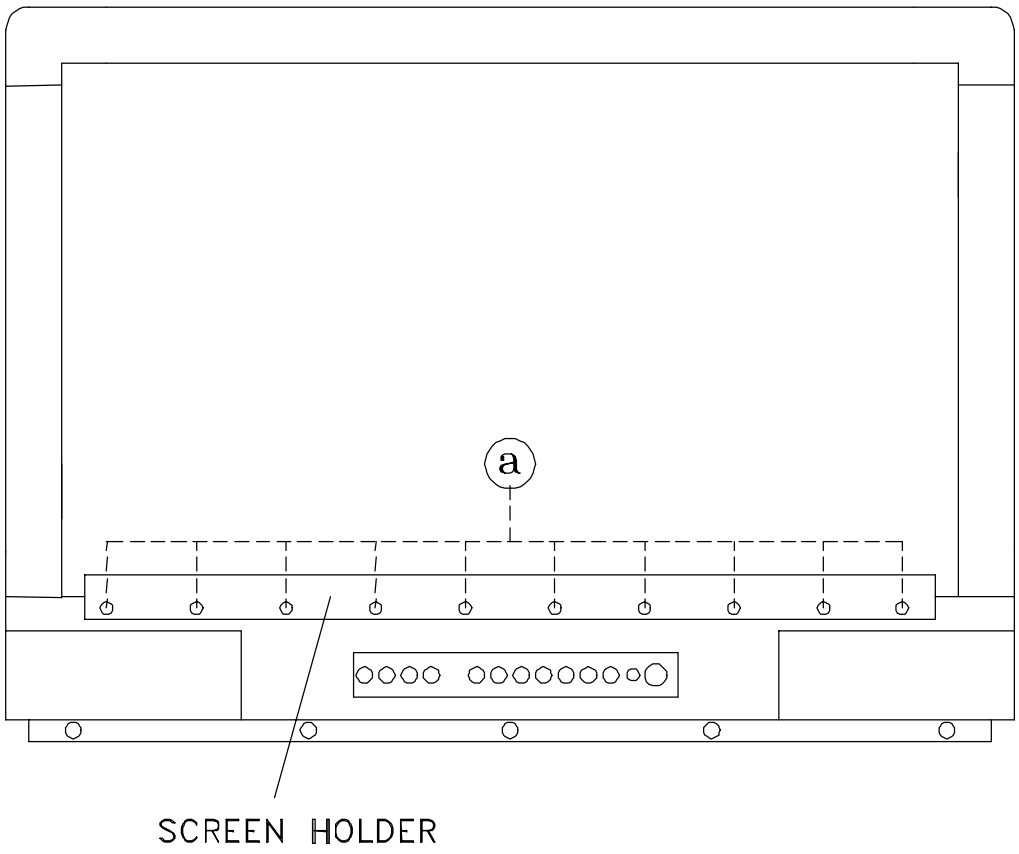


Figure 3-1

2. Installation of the Lenticular Screen and Fresnel Lens

Note: Store the Lenticular Screen and Fresnel Lens in a cool dry place. High humidity may deform the Lenticular Screen and Fresnel Lens.

1. Apply double coated tape (Part # LENS-TAPE) along the top front edge of the Fresnel Lens as shown in figure 3-2. Refer to Table A for proper tape length.
2. Place the Fresnel Lens on top of the Lenticular Screen and apply pressure at the top edge to bond them together as shown in figure 3-2.
3. Install CUSHION-CORNER pads at the bottom corners on the back of the Fresnel Lens, as shown in figure 3-3.

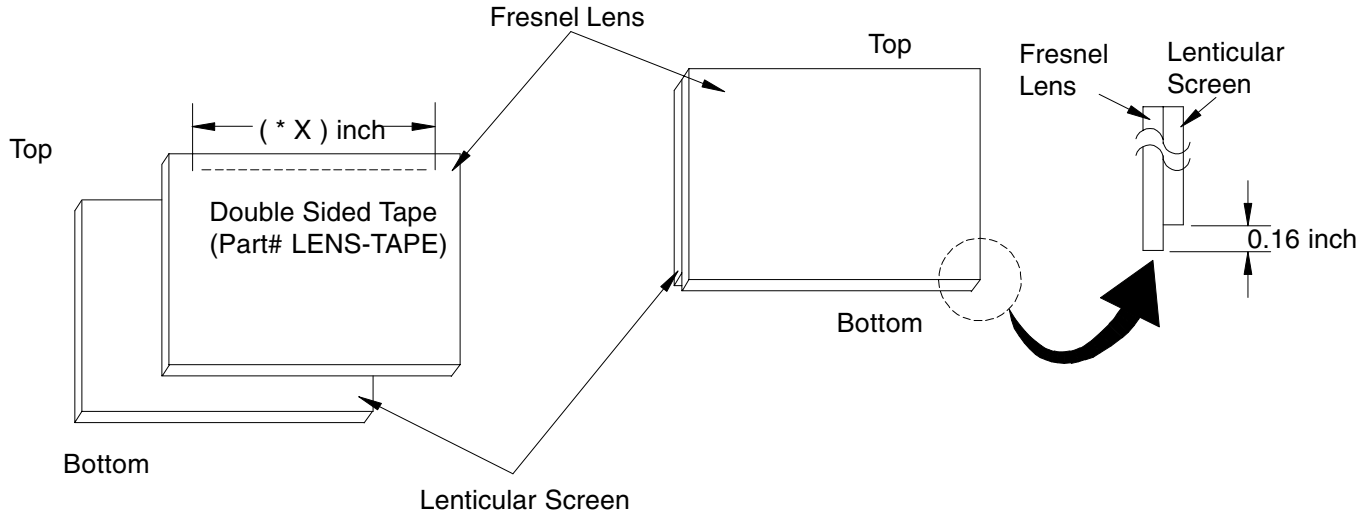


Figure 3-2

** Tape Application Guide*

MODEL	SCREEN SIZE	TAPE LENGTH
VS-45609	45"	36"
VS-50609	50"	40"
VS-55609	55"	44"
VS-60609	60"	48"
VS-60719	60"	48"
VS-70709	70"	56"

Table A

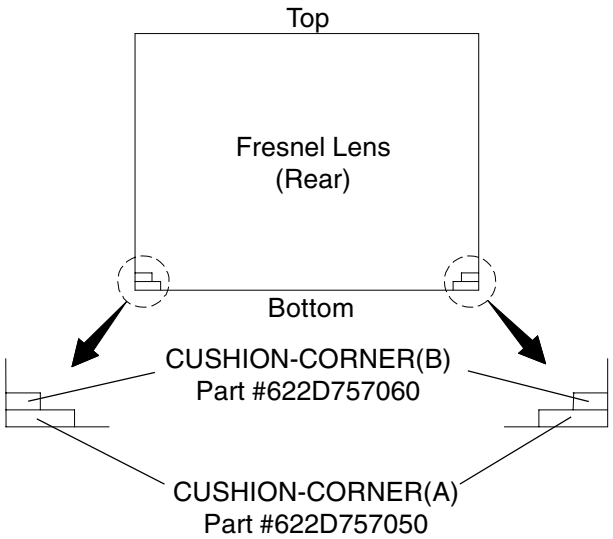


Figure 3-3

CABINET SEPARATION PROCEDURE (VS-70709)

Model VS-70709 cabinets are assembled in two pieces. These two pieces may be separated to allow easier delivery and setup.

Note: *The Guide Pins under the cabinet top may break if mishandled. Keep the cabinet top straight when removing and installing. DO NOT tilt the cabinet top while resting on the guide pins.*

1c. VS-70709 Cabinet Separation Precedure

1. Remove the Screen Assembly and disconnect all cable harnesses between the Frame Assembly and the PCB-SIGNAL (refer to ***1a. Front Cabinet Disassembly***).
2. Remove 4 screws “a” securing the top and bottom cabinet sections (Figure 1-3).
3. Lift the cabinet top straight up until the guide pins are clear.
4. Carefully place the cabinet top on the floor.
5. Place the cabinet bottom in the desired location.
6. Reverse the procedure and mount the cabinet top on the cabinet bottom.
7. Reinstall the the Screen Assembly and connect all cable harnesses between the Screen Assembly and the PCB-SIGNAL.

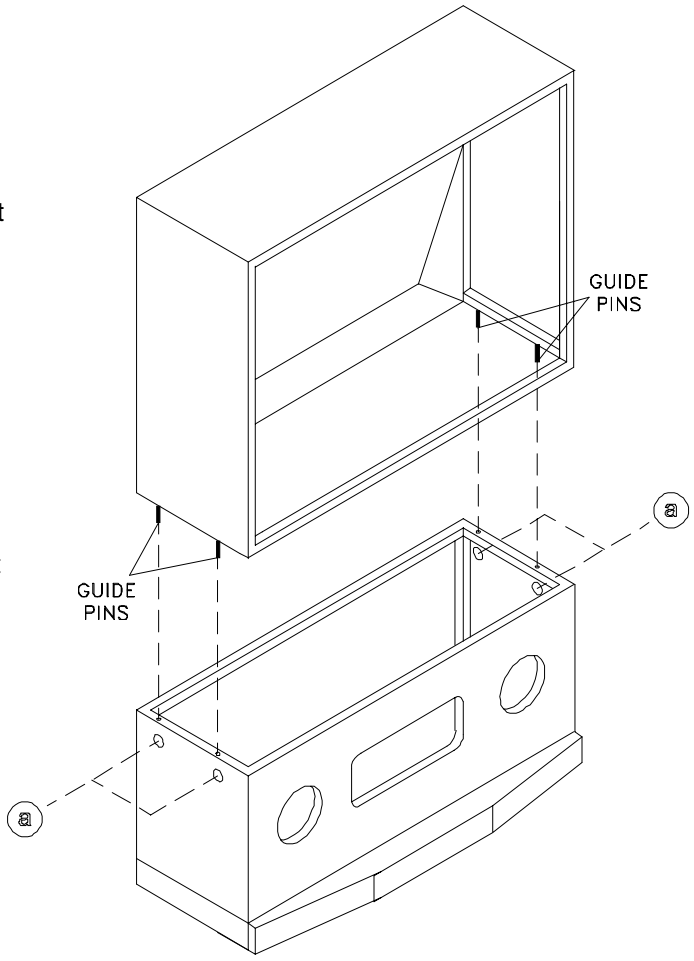


Figure 1-3

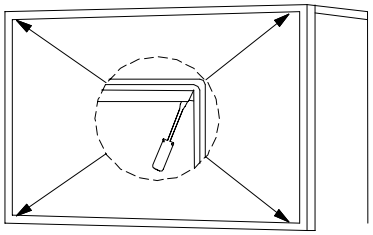
SERVICING THE DIAMONDSHIELD™

1. DiamondShield™ Removal Procedure

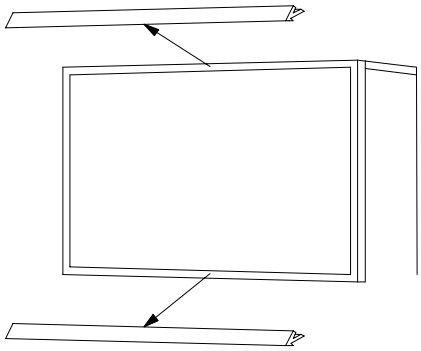
The location of the DiamondShield™ molding clips may vary between models, top and bottom, or sides. Use the appropriate disassembly procedure given below.

Note: ***Wear gloves when handling the DiamondShield™ to prevent finger prints.***

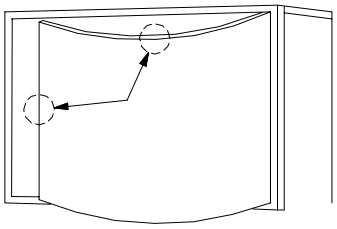
Top & Bottom Molding Clips



1. Gently insert a small screwdriver between the DiamondShield™ and one end of the clip to pry the clip loose.

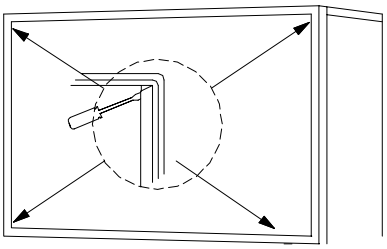


2. Remove both clips by pulling them toward you.

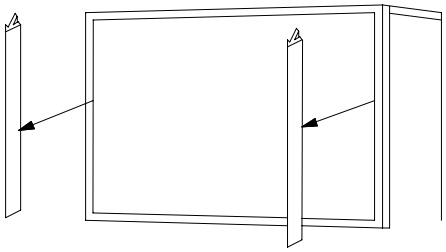


3. Carefully insert a small screwdriver into the gap at the top/center point of the Shield and pull the Shield slightly away from the unit. Place your hands at the points shown and gently bow the Shield toward you and remove from the unit. Then re-install the two clips.

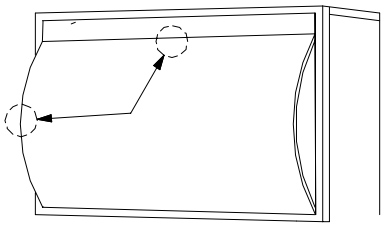
Side Molding Clips



1. Gently insert a small screwdriver between the DiamondShield™ and one end of the clip to pry the clip loose.



2. Remove both clips by pulling them toward you.



3. Carefully insert a small screwdriver into the gap at the side/center point of the Shield and pull the Shield slightly away from the unit. Place your hands at the points shown and gently bow the Shield toward you and remove from the unit. Then re-install the two clips.

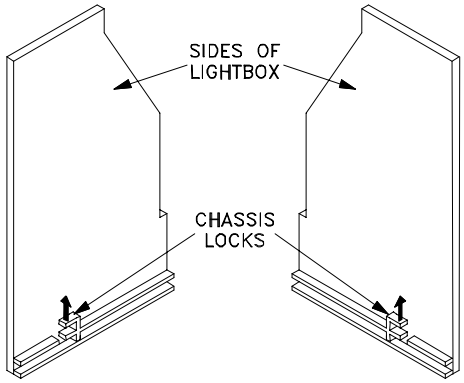
2. DiamondShield™ Installation Procedure

*(See the Parts List for DiamondShield™ part numbers)

To install the DiamondShieldTM, reverse the above Removal Procedure.

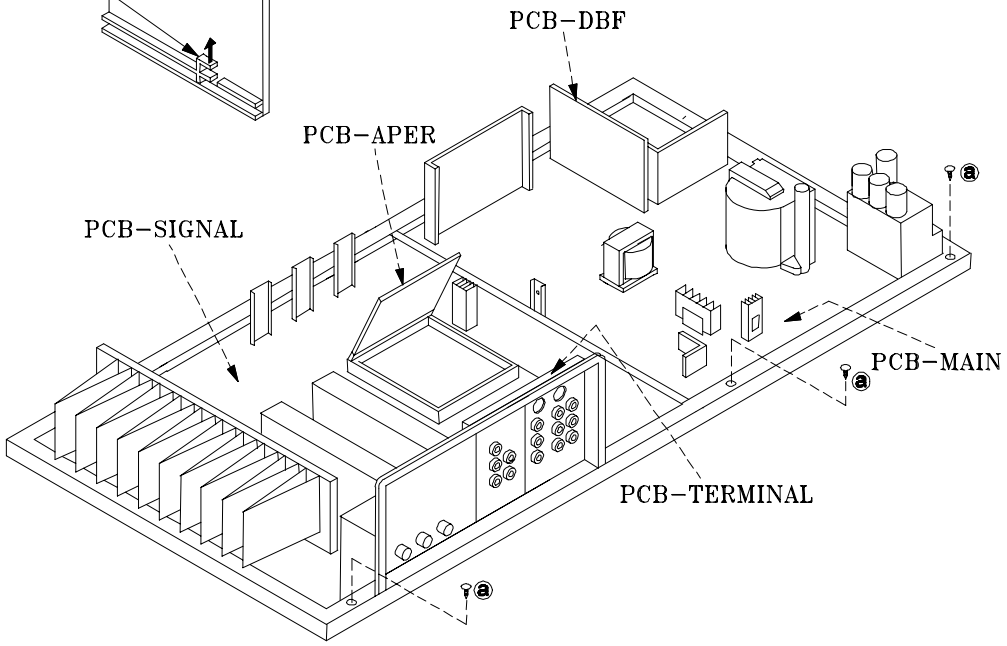
SERVICING PCBs

Chassis Removal and PCB Locations

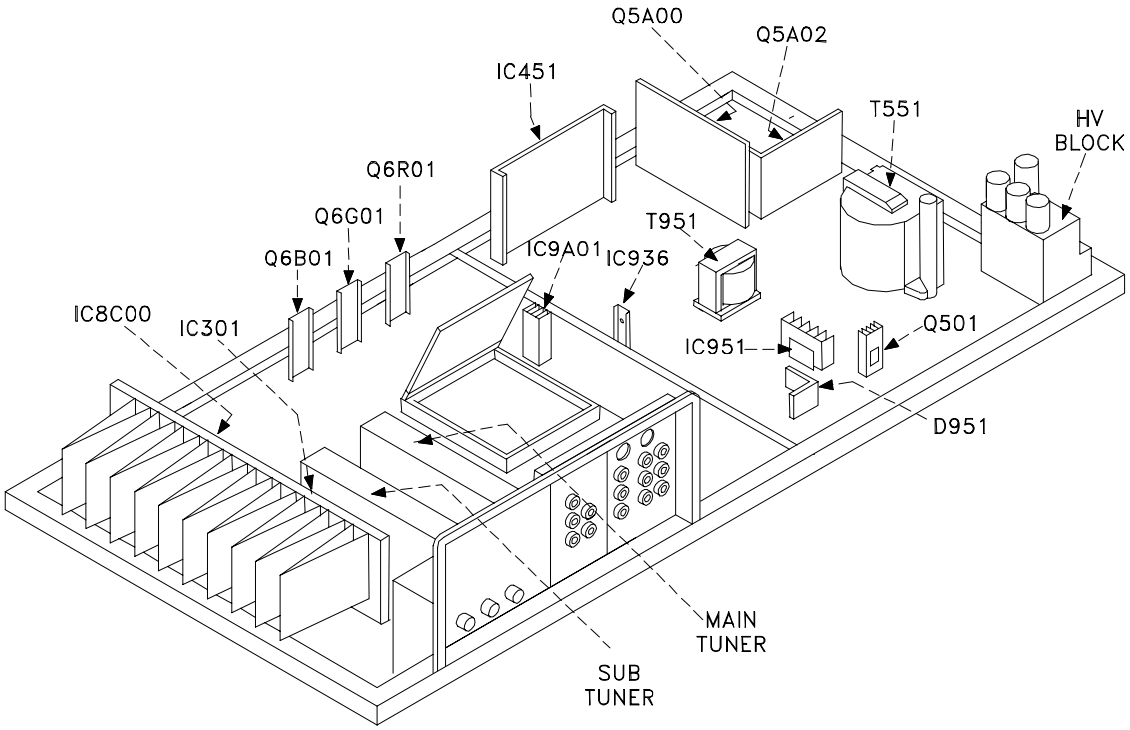


Chassis Removal

1) Remove 3 screws “a” from the Main Chassis.
2) Raise the two chassis locks on the inner sides of the Lightbox Assembly and slide the chassis towards the rear.



Major Parts Locations



CRT REPLACEMENT

1. Removal of the CRT

Caution! High voltage should be completely discharged prior to CRT removal. Since The CRTs receive high voltage from the CR Block, discharge by shorting the open end of the respective high voltage cable to chassis ground.

Note: Refer to figures 1-1 through 2-2 when performing steps 1 through 4.

1. Remove the Speaker Grille, Front Board, and Screen Assy.
2. Remove the Back Board.
3. Remove the Anode Lead Wire from the CR Block.
4. Remove the PCB-CRT.
5. Remove 4 hex-screws "a" retaining the Optical Unit. [Figure 5-1]
6. Remove 4 screws "b" retaining the Lens.

Note: DO NOT loosen the RED screws. Doing so will break the seal between the C-Element and the # 6 Lens, causing leakage of the CRT Coolant.

7. Remove 4 screws "c" retaining the CRT. [Figure 5-2]
8. Remove the Deflection Yoke from the neck of the CRT. [Figure 5-7]

Figure 5-1

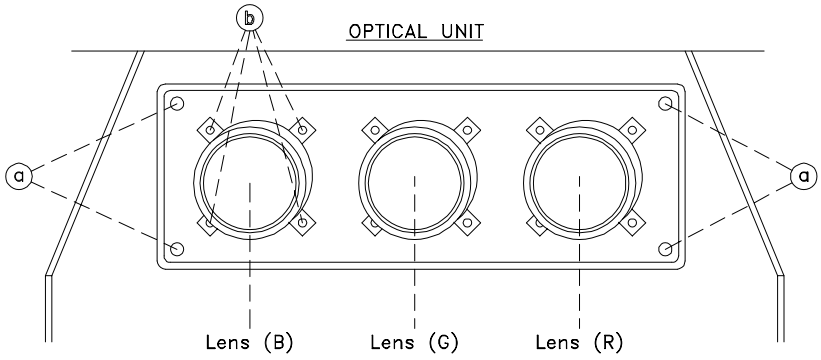
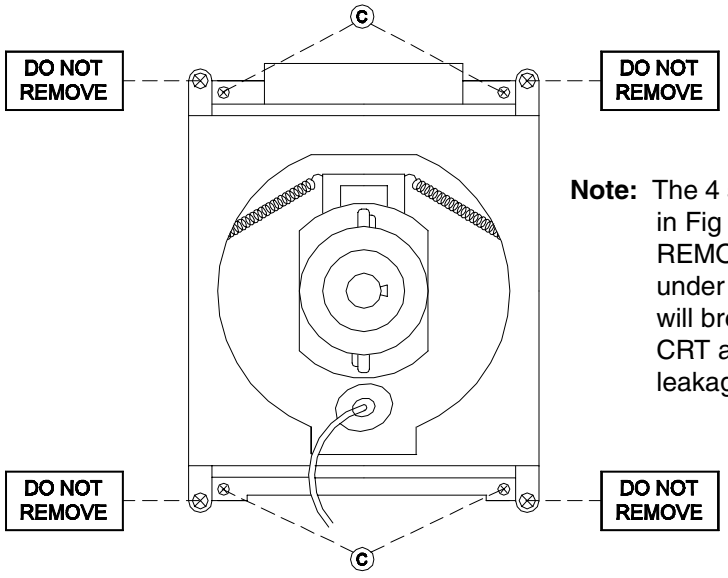


Figure 5-2



Note: The 4 spring-loaded screws shown in Fig 5-2 and labeled as "DO NOT REMOVE", should not be loosened under any circumstance. Doing so will break the seal between the CRT and the CRT-Spacer, causing leakage of the CRT Coolant.

2. Installation of the CRT

Note: The replacement CRT is supplied as an assembly comprised of the CRT and the Inner Lens with the space between them filled with ethylene glycol. Care should be taken during handling and installation to prevent shock from disrupting the seal or alignment between the CRT and Inner Lens. [Figure 5-3]

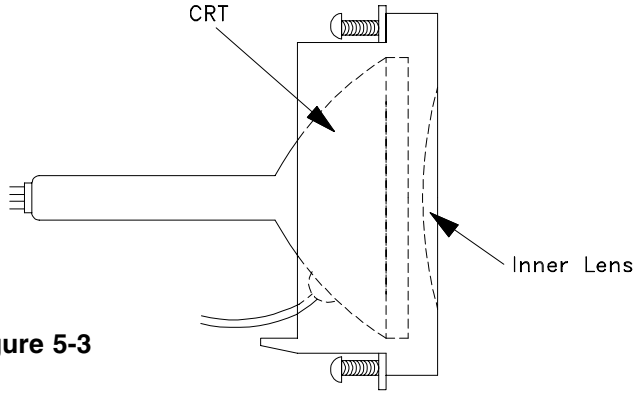


Figure 5-3

Note: The CRT fixing screws should not be loosened nor should they be removed. [Figure 5-4]

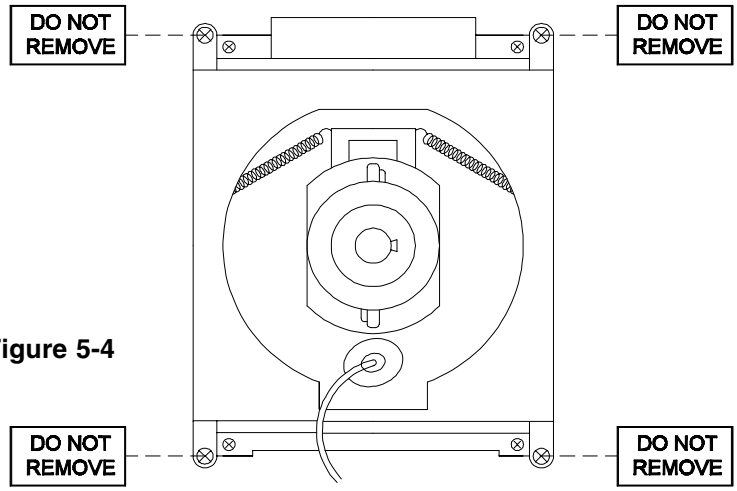


Figure 5-4

1. Carefully position the replacement CRT and fasten in place using 4 screws "d". [Figure 5-6]

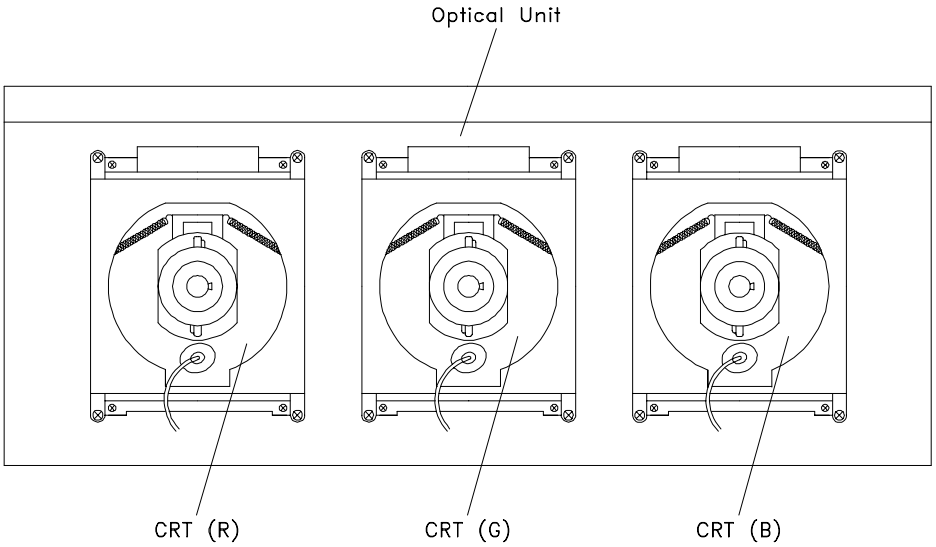


Figure 5-5

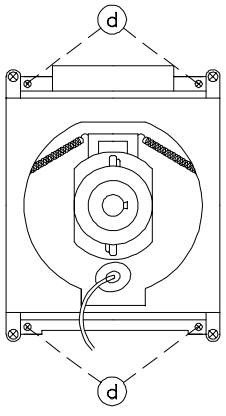


Figure 5-6

2. Install the Deflection Yoke on the CRT neck. [Figure 5-7]
3. Install the Lens that was removed in steps 5 and 6 of Removal Of The CRT. [Figures 5-1 and 5-2]
    a) Position the Lens so that the Label faces the direction shown in Figure 5-8.
    b) Install the mounting screws. [Figure 5-1]
4. Install the PCB-CRT.
5. Insert the Optical Unit into the Light Box Assembly.
6. Insert the Anode Lead Wire into the Flyback Transformer.
7. Re-clamp the Lead Wire in its original position.

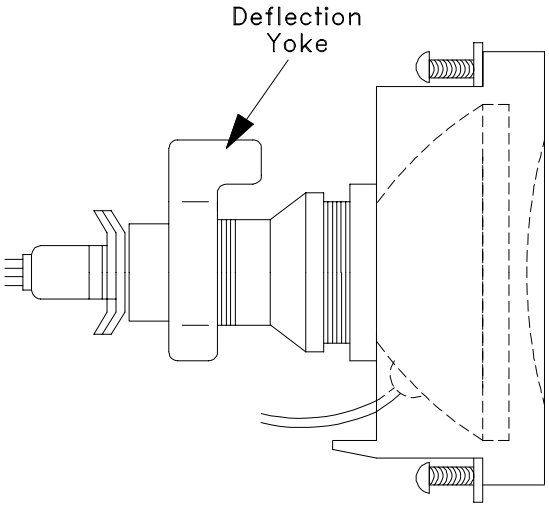


Figure 5-7

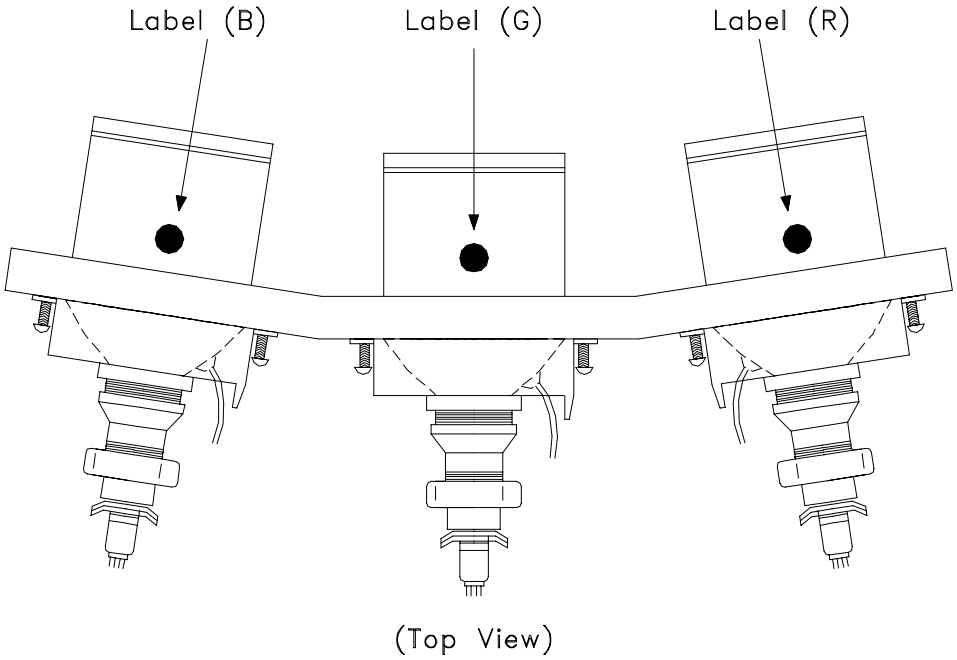


Figure 5-8

Adjustment procedures after replacing the CRT(s)

- CRT Cut Off / White Balance Adjustment
- Static Convergence Adjustment
- Dynamic Convergence Adjustment

ELECTRICAL ADJUSTMENTS

Note: Perform only the adjustments required.
Do not attempt an alignment if proper equipment is not available.

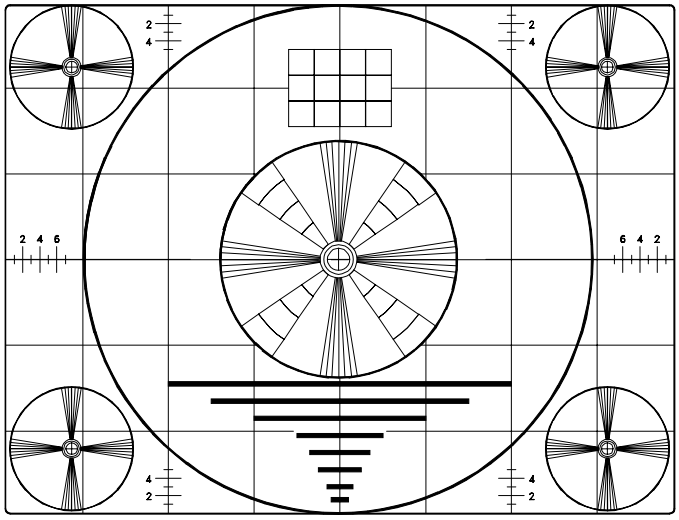
1. Test Equipment

- Oscilloscope (Unless otherwise specified, use 10:1 probes)
- Signal Generator
- Frequency Counter
- Direct Current Voltmeter
  Direct Current Power Supply
- Multiplex Audio Signal Generator
- Direct Current Ampere Meter

2. Test Signal

A. Monoscope Signal

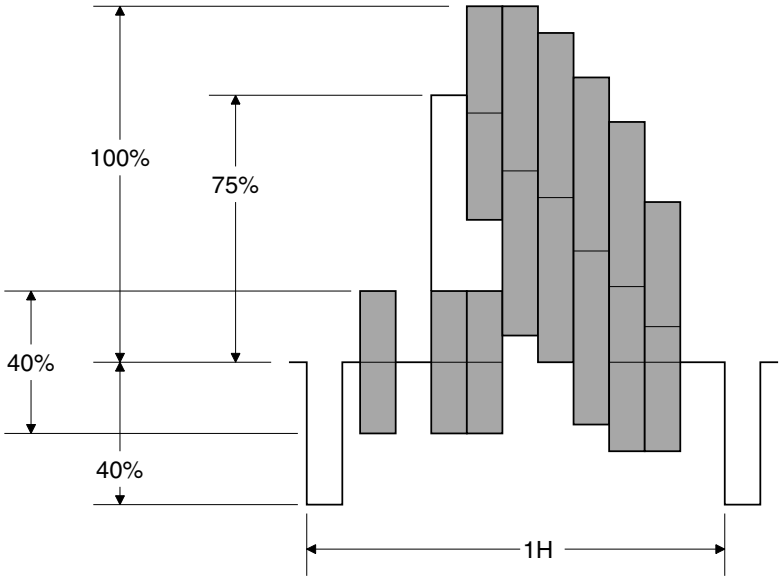
Note: If you do not have a monoscope signal source, connect the unit to a VCR and play a Monoscope *alignment tape.
(* Part Number: 859C568060)



Monoscope Signal

B. Color Bar Signal

Use the color bar signal shown below, unless otherwise specified in this manual.



Split-Field Color Bars (100% window)

3. Initial Setup

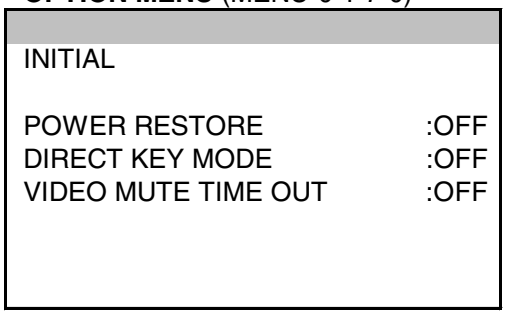
1. Option Menu Setup

Follow the steps below for the initial set-up:

1. Select the "MENU" display by pressing the "MENU" button once.
2. Press the number buttons "0", "1", "7", "0" in sequence to select the "OPTION MENU" display.
3. Press the "ADJUST" button to select "INITIAL."
4. Press "ENTER."

NOTE: At this time channel 3 is automatically selected.

OPTION MENU (MENU-0-1-7-0)



2. Default Settings

INITIAL SETTINGS

Item	Description	Initial Setting
1	Input	TV
2	Receiving Channel	003 CH
3	TV/CATV	CATV
4	QV	Recalls previous ch.
5	Channel Memory	All CH (0,0)
6	V-CHIP LOCK	
	Lock by Time	OFF
	Lock Time	12:00 AM
	UnlocK Time	12:00 AM
7	Lock Channels	OFF
8	LOCK CODE	- - - -
9	VOLUME	30%
10	AUDIO FUNCTIONS	
	TV Listen to	STEREO
	TV Bass	50%
	TV Treble	50%
	TV Balance	50%
	TV Surround	OFF
	TV Level sound	OFF
11	VIDEO FUNCTIONS	
	TV Tint	50%
	TV Color temp	High
	TV Noise Reduction	OFF
	TV Contrast	100%

Item	Description	Initial Setting
11	TV Brightness	50%
	TV Sharpness	50%
	TV Color	50%
12	Speaker	ON
13	Background	Gray
14	Closed Caption	On if Mute
15	PIP SOURCE	TV
16	PIP POSITION	Lower Right
17	VIDEO MUTE	OFF
18	INPUT, NAME	All inputs name OFF
19	TIMER	OFF
20	SQV	All Ch Clear (deleted)
21	SYSTEM 4*	OFF
22	LANGUAGE	English
23	Name The Channels	All Labels Cleared
24	Locked to Input	No
25	External Audio System	No
26	Vol. change by AV Rec.	N/A
27	Auto Clock Setting	OFF
28	Front Lock Function	OFF
29	PIP Demo Mode	OFF
30	Clock Time	- -:- -
31	Set Day	Sunday

*** Note: System 4 in VS-60719 & VS-70709 only**

Items in the table below are set to following after Initalization.

AV MEMORY

AV MEMORY	All Inputs
TINT	31
COLOR	31
CONTRAST	63
BRIGHTNESS	31
SHARPNESS	31
COLOR TEMP	HIGH
BASS	31
TREBLE	31
BALANCE	31
SURROUND	OFF
LEVEL SOUND	OFF

4. LED Indicator Diagnostics

The “Power ON LED” provides an indication of the sets operation, and the possible cause of a malfunction.

1. Initial Control Circuitry Check

Immediately after the TV is connected to an AC power source:

- The LED flashes three times ... indicating the Microprocessor has initialized and is functioning properly.
- If the LED does not flash ... the Microprocessor is NOT functioning.

2. Error Code Operational Check

Pressing the front panel “INPUT” and “MENU” buttons at the same time, and holding for 5 seconds, activates the Error Code Mode. The LED flashes denoting a two digit Error Code, or indicating no problem has occured since the last Initalization.

Note: The front panel buttons must used, NOT those on the Remote Control.

- The number of flashes indicates the value of the MSD (tens digit) of the Error Code.
- The flashing then pauses for approximately 1/2 second.
- The LED then flashes indicating the value of the LSD (ones digit) of the Error Code.
- The Error Code is repeated a total of 5 times.

  Example: If the Error Code is “24”, the LED will flash two times, pause, and then flash four times.

3. Error Codes

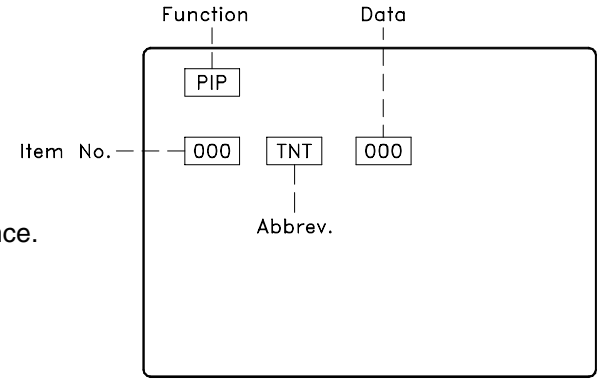
The Error Code designations indicating a malfunction, or no malfunction, are listed below:

“12” ... indicates no error has occured.
“21” ... X-Ray Protect circuit.
“22” ... Short Protect circuit.
“23” ... Horizontal Deflection failure.
“24” ... Vertical Deflection failure.

5. Circuit Adjustment Mode

Except for the following, all adjustment items must be performed using the remote hand unit.

- Lens Focus
- Electrostatic Focus



A. Activating the Circuit Adjustment Mode

1. Press the "MENU" button on a remote hand unit.
2. Press the number buttons "0", "1", "5", "7" in sequence. The screen will change to the Adjustment Mode.

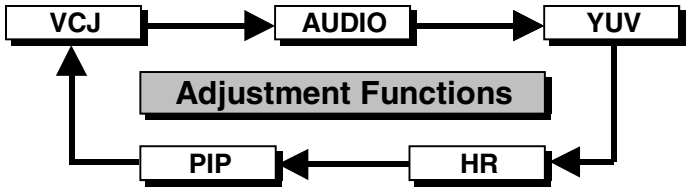
Note: Repeat steps 1 and 2 if the circuit adjustment mode does not appear on screen

B. Selection of adjustment Functions and Adjustment Items

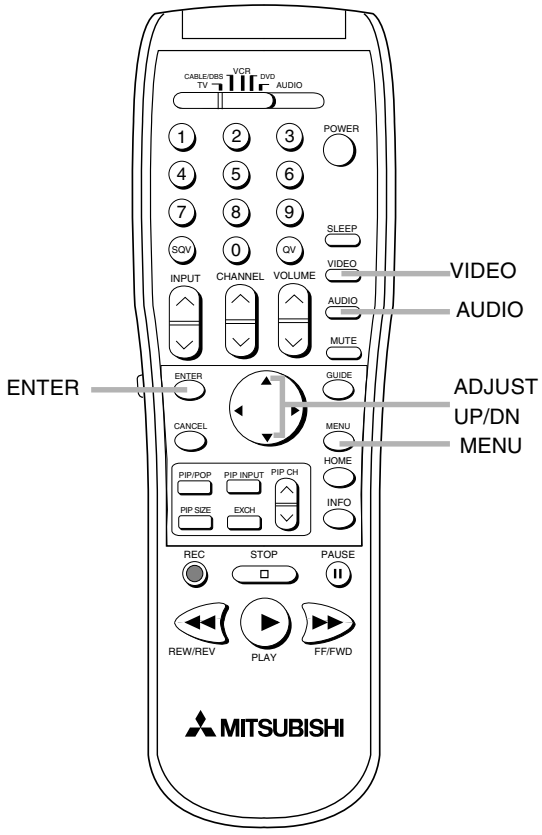
To select an adjustment item in the circuit adjustment mode, first select the adjustment function that includes the specific adjustment item to be selected. Then, select the adjustment item.

Refer to the following pages for the listing of adjustment functions and adjustment items.

1. Press the "AUDIO" button on a remote hand unit to select an adjustment function. Each time the button is pressed, the Function changes in the following sequence:



2. Press the “VIDEO” button to select a specific Adjustment Item. The Item number increases each time the “VIDEO” button is pressed.



C. Changing Data

After selecting an adjustment Item, use the “ADJUST UP/DOWN” button to change data.

- Press “ADJUST DOWN” to decrease the data value.
- Press “ADJUST UP” to increase the data value.

D. Saving Adjustment Data

Press “ENTER” to save adjustment data in memory. The character display turns red for approximately one second in this step.

Note: If the circuit adjustment mode is terminated without pressing “ENTER”, changes in adjustment data are not saved.

E. Terminating the Circuit Adjustment Mode

Press the “MENU” button on the remote hand unit twice to terminate the adjustment mode.

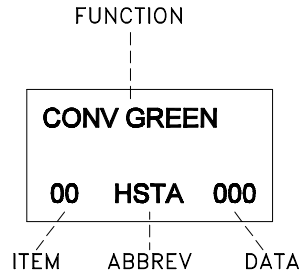
Note: The circuit adjustment mode can also be terminated by turning power OFF.

7. Convergence Adjustment Mode

The Convergence mode is used to perform raster geometry correction, and convergence adjustments as specified in Adjustment Procedures 15, 17, 18, 19 and 20.

A. Convergence Mode Activation

1. Press MENU-0-1-5-9
2. When the Convergence Mode is activated, the display at the right appears on a Green Crosshatch.



B. Convergence Mode Functions

In the Convergence Mode there are three main Functions (Categories).

- Pressing “6” activates CONV MISC
- Pressing “5” activates COARSE CONV
- Pressing “4” activates FINE CONV

C. CONV MISC (Press 6)

This mode is used to preset data values controlling the Convergence Generator, and to perform the HV Regulation adjustment.

1. Use the VIDEO button to select an item.
2. Use the ADJUST buttons to change data.

Note: When Item “1 HVOL” is selected the screen goes black except for the data display. This occurs since a black screen is required when making the HV Regulation adjustment.

D. COARSE CONV (Press 5)

There are four Sub Functions in the Coarse mode, COARSE GREEN, COARSE RED, COARSE BLUE and DF.

- COARSE GREEN .... used to make Coarse Raster Geometry Adjustments.
- COARSE RED ... used to make Coarse Red Convergence Adjustments.
- COARSE BLUE ... used to make Coarse Blue Convergence Adjustments.
- DF ... used to preset data values controlling the Dynamic Beam Focus circuit drive signal.

1. Use AUDIO button to select a Sub Function
2. Use the VIDEO button to select an Adjustment Item.
3. Use the ADJUST buttons to change data.

E. FINE CONV (Press 4)

Sub Functions

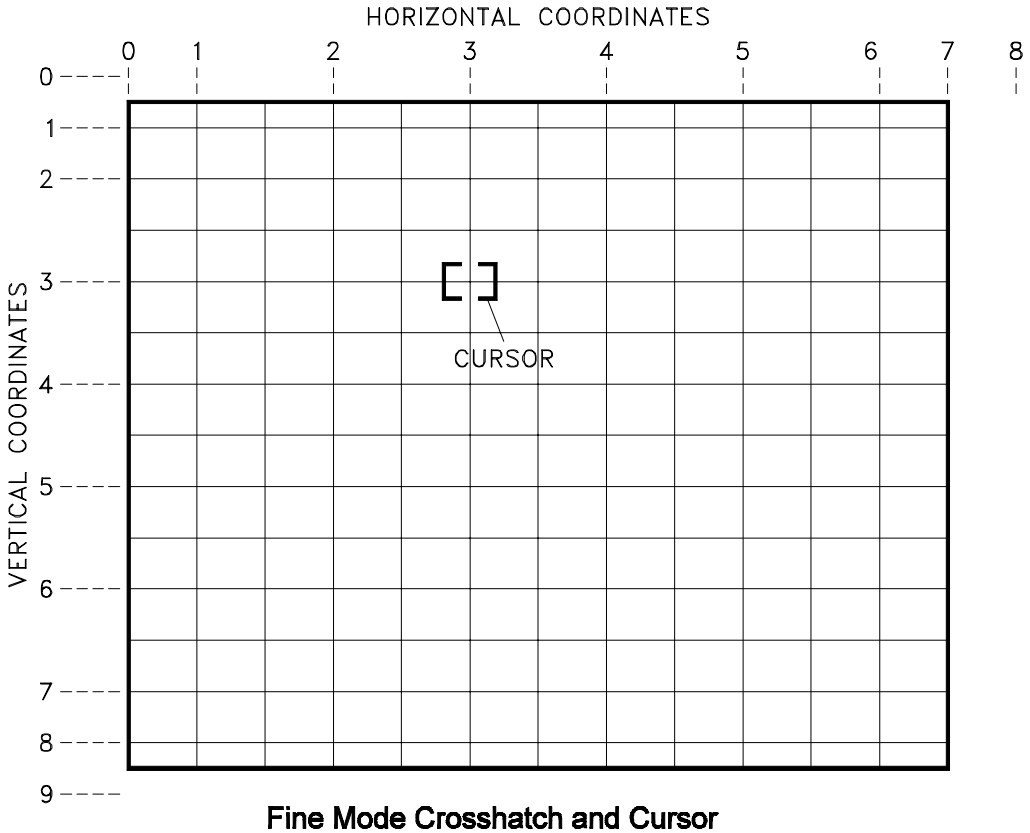
This mode is used to perform Fine Raster Correction, and Fine Red and Blue Convergence Adjustments. There are three Sub Adjustment Functions, selected with the AUDIO button:

- FINE GREEN .... a Green Crosshatch is displayed, for Fine Raster Corrections.
- FINE RED .... a White Crosshatch is displayed, for Fine Red Convergence Adjustments.
- FINE BLUE .... a White Crosshatch is displayed, for Fine Blue Convergence Adjustments.

Cursor

In the Fine mode a Cursor is added to the Crosshatch. The ENTER button toggles the Cursor between two modes:

- MOVE (blinking Cursor) .... use the ADJUST buttons to select any of 64 points on the Crosshatch.
- ADJUST (Non blinking Cursor) .... the ADJUST buttons adjust the active color at the current Cursor position, horizontally or vertically.



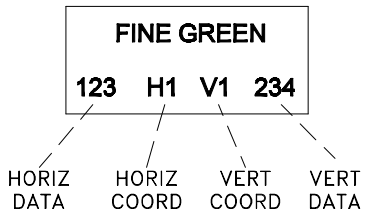
Fine Mode Crosshatch and Cursor

Cursor Coordinates

Specific intersections in the Crosshatch are assigned vertical and horizontal coordinates. These are shown in the above diagram. The Cursor can only be moved to those positions that have coordinates assigned. If the Cursor is at coordinates outside the screen area, the Cursor will not be visible. Use the ADJUST buttons to move the Cursor to an intersection on the screen.

Display

The on-screen display changes in the Fine mode, as shown below. The display shows the vertical and horizontal data for the current Cursor Position, and the horizontal and vertical coordinates for that position.



F. Saving Data and Exiting the Convergence Mode

Press MENU twice to exit the Convergence mode, data is automatically saved.

Note: If power is interrupted prior to properly exiting the Convergence Mode, changes in adjustment data will not be saved.

ADJUSTMENT ITEMS LIST

When Replacing the EEPROM (IC701)
The EEPROMs (IC701 and IC801) store the adjustment data. After replacing the EEPROM, readjust the data to the values given in the following tables. If good performance is not obtained with these values, perform the Adjustment Procedure(s) given in the Notes column.

VCJ Function

Item No.	Abbrev.	Description	Range 0 ~ •••	Initial Data	Service Adjustment
1	SCT	Sub Contrast	63	55	Sub Contrast
2	VHGT	Height	63	31	Vertical Height
3	SCOR	S-Distortion	15	7	
4	VLIN	Vertical Linearity	15	7	Vertical Linearity
5	UPVL	Top Vertical Linearity	15	0	
6	LOVL	Bottom Vertical Linearity	15	0	
7	BRTH	Brightness Control (high)	63	31	Black Level
8	CTRH	Red Cutoff (high temp.)	15	7	White Balance (high)
9	CTGH	Green Cutoff (high temp.)	15	10	CRT Cutoff
10	CTBH	Blue Cutoff (high temp.)	15	7	White Balance (high)
11	RDRH	Red Drive (high temp.)	63	31	White Balance (high)
12	GDR	Green Drive	63	51	
13	BDRH	Blue Drive (high temp.)	63	31	White Balance (high)
14	CTRL	Red Cutoff (low temp)	15	7	White Balance (low)
15	CTGL	Green Cutoff (low temp)	15	10	
16	CTBL	Blue Cutoff (low temp)	15	7	White Balance (low)
17	RDRL	Red Drive (low temp.)	63	31	White Balance (low)
18	BDRL	Blue Drive (low temp.)	63	31	White Balance (low)
23	CBOF	Cb Offset	15	7	Cb, Cr Offset
24	CROF	Cr Offset	15	7	Cb, Cr Offset
25	SHUE	Sub Hue Control	15	7	
26	SCOL	Sub Color Gain	15	12	
27	SCON	Sub Contrast Control	15	7	
28	AG-1	Aging Mode On/Off	1	0	
30	COLH	Color Gain high	63	27	Cb, Cr Offset
51	VPOS	V-Drive DC bias	63	31	
55	HPOS	Horiz. Position	63	34	

AUDIO Function

Item No.	Abbrev.	Description	Range 0 ~ •••	Initial Data	Service Adjustment
1	INP	Input Level	15	7	Audio Input Level
2	AUT	Auto Alignment Off/On Sw.	1	0	
3	WDE	Wideband Separation	31	16	Separation
4	SPC	Spectral Separation	31	16	Separation

PIP Function

Item No.	Abbrev.	Description	Range 0~…	Initial Data	Service Adjustment
1	HUE	Sub Picture Hue	63	0	Sub Picture Tint
2	CSAT	Sub Picture Color Saturation	15	0	Sub Picture Color
3	CONT	Sub Picture Contrast	15	7	Sub Picture Contrast
4	BLKR	RED Output Pdestal Level	15	0	
5	BLKG	GREEN Output Pdestal Level	15	0	
6	BLKB	BLUE Output Pdestal Level	15	0	
7	BRIT	Sub Picture Brightness	15	0	
8	PON	PIP On/Off	1	0	

YUV Function

Item No.	Abbrev.	Description	Range 0 ~ •••	Initial Data	Service Adjustment
28	PEAK	Peaking Amplitude Adjust	63	40	

HR Function

Item No.	Abbrev.	Description	Range 0 ~ •••	Initial Data	Service Adjustment
1	HR	OSD Horiz. Position	15	7	Display Centering

CONVERGENCE MODE ITEMS

CONV MISC

Item	Abbr.	Data	Description
1	HVOL	200	High Voltage Control
2	VCNT	62	Vertical correction signal increment per line
3	VSTR	0	Start point of vertical correction
4	VOFS	0	V Offset
5	STLN	20	Horiz. Correction signal start line number
6	FPHS	300	Fine H-phase of correction signal
7	CPHS	15	Coarse H-phase of correction signal
8	HOFS	16	H Offset
9	DPHS	13	Dynamic Focus H-phase
10	D0FS	0	Dynamic Focus Offset
11	TPHS	50	Test pattern H-phase
12	TPVO	13	Test pattern V-position
13	ODEV	24	Odd/Even detection
14	HRTC	1	Horizontal Retrace
15	DRTC	1	DBF retrace
16	EPWP	0	EEPROM write protection

CONV GREEN

Item	Abbr.	Data	Description
1	HSTA*	0	Horiz. Position
2	VSTA*	0	Vertical Position
3	SKEW	0	Skew (Y axis rotation)
4	TILT	0	Tilt (X axis rotation)
5	HWID	30	Width
6	HLIN	0	Horizontal Linearity
7	SPCC	-125	Side Pin Cushion Correction
8	HKEY	30	Horizontal Keystone
9	TBPC	-230	Top/Bottom Pin Cushion Correction
10	VKEY	-10	Vertical Keystone Correction
11	VWID	0	Height
12	VLIN	0	Vertical Linearity

***HSTA & VSTA data should not exceed ±100**

CONV RED

Item	Abbr.	Data	Description
1	HSTA*	100	Horiz. Position
2	VSTA*	0	Vertical Position
3	SKEW	0	Skew (Y axis rotation)
4	TILT	0	Tilt (X axis rotation)
5	HLIN	-270	Horizontal Linearity
6	HWID	-60	Width
7	VKEY	-170	Vertical Keystone Correction
8	VWID	0	Height
9	VLIN	0	Vertical Linearity
10	TBPC	0	Top/Bottom Pincushion Correction
11	SDBW	80	Horizontal Bow

***HSTA & VSTA data should not exceed ±100**

CONV BLUE

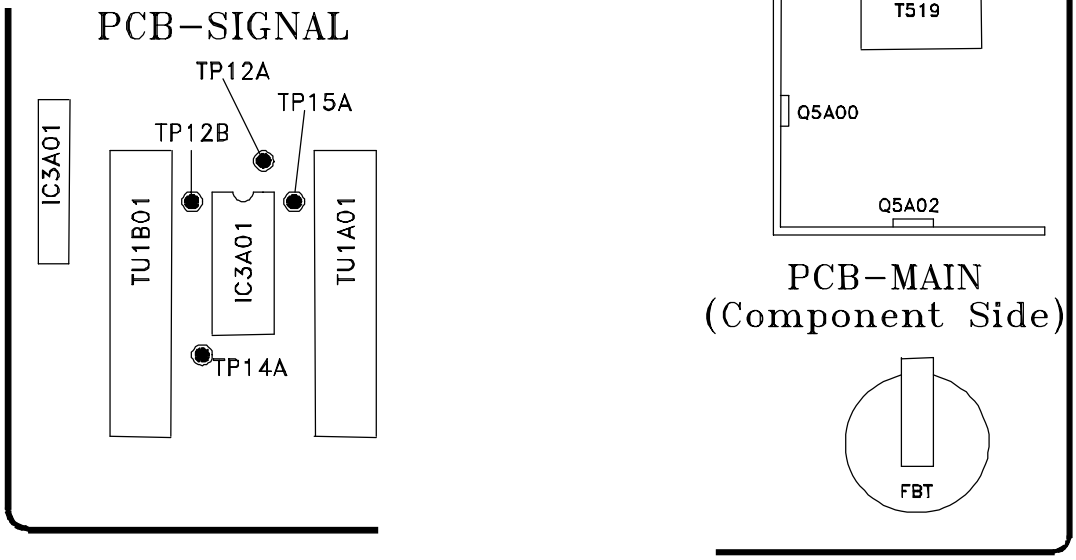
Item	Abbr.	Data	Description
1	HSTA*	-100	Horiz. Position
2	VSTA*	0	Vertical Position
3	SKEW	0	Skew (Y axis rotation)
4	TILT	0	Tilt (X axis rotation)
5	HLIN	280	Horizontal Linearity
6	HWID	-50	Width
7	VKEY	150	Vertical Keystone Correction
8	VWID	0	Height
9	VLIN	0	Vertical Linearity
10	TBPC	0	Top/Bottom Pincushion Correction
11	SDBW	-70	Horizontal Bow

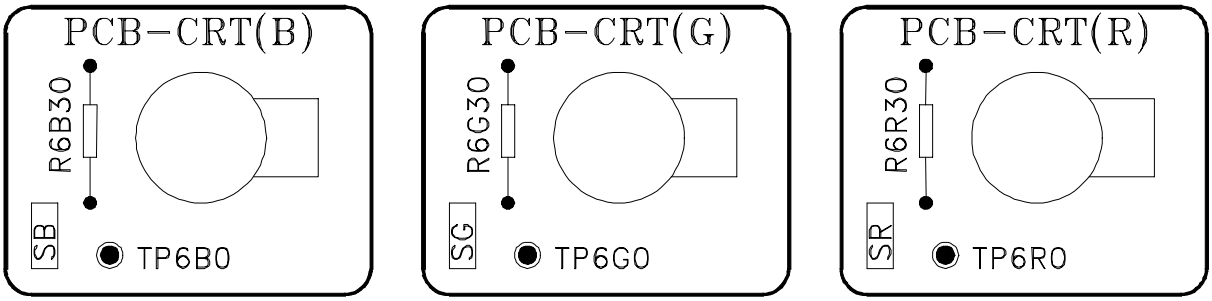
***HSTA & VSTA data should not exceed ±100**

DF Function

Item	Abbr.	Data	Description
0	DFH	200	Dynamic Focus (Horizontal)
1	DFV	100	Dynamic Focus (Vertical)

Location of Test Points and Adjustments





[Audio Circuit]

1. Input Level

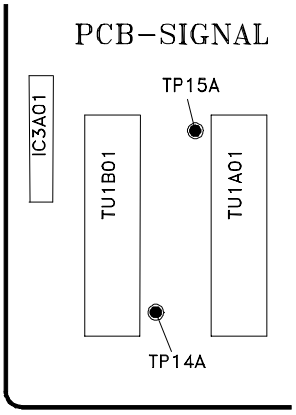
Purpose: Set the input signal level to the MCS circuit.

Symptom: Distorted sound during a stereo broadcast.

Measuring Instrument	Oscilloscope
Test Point	TP14A, TP15A
Ext. Trigger	------
Measuring Range	50mV/Div
Input Signal	RF Monaural 300 Hz modulation
Input Terminal	RF Input

1. Supply an RF monaural signal to the Ant A input, 300 Hz at 100% modulation (25 kHz deviation).
2. Connect the oscilloscope to TP15A (Right Channel). (Junction of R2K64 and R3A38)
3. Enter the Adjustment Mode and select the Audio Function.
4. Verify that the Audio Function items are set to the data values given the table below.
5. Adjust Item "1 INP" for 1.55 ±0.06 Vp-p at TP15A.
6. Connect the oscilloscope to TP14A. (Junction of R2K62 and R3A15)
7. Confirm that the left channel output at TP14A is 1.55 ±0.06 Vp-p.

Note: *Adjustment 2 (Stereo Separation) must be performed after this adjustment)*



SERVICE MODE

Activate …….. MENU-0-1-5-7
Function ……..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..……ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

AUDIO Function

Item	Abbrev.	Data
1	INP	7
2	AUT	0
3	WDE	16
4	SPC	16
15	MZX	1
16	VZX	1
20	ATK	1

[Audio Circuit]

2. Separation

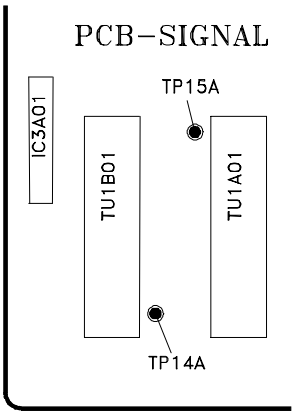
Purpose: Adjust for optimum stereo separation.

Symptom: Poor stereo separation

Measuring Instrument	Oscilloscope
Test Point	TP14A, TP15A
Ext. Trigger	------
Measuring Range	10mV/Div
Input Signal	RF Stereo
Input Terminal	RF Input

Note: *This adjustment must follow Adjustment 1 (Input Level)*

1. Supply a RF Stereo Signal to the Ant. A input.
   - Left Channel = 300 Hz modulation
   - Right Channel = no modulation signal
2. Connect the oscilloscope to TP15A (right channel). (Junction of R2K64 and R3A38)
3. Enter the Service Mode and select the Audio Function.
4. Adjust Item "3 WDE" for minimum signal at TP15A.
5. Change the modulation frequency to 3 kHz.
6. Adjust Item "4 SPC" for minimum signal at TP15A.



SERVICE MODE

Activate …….. MENU-0-1-5-7
Function ……..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..……ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

[High Voltage Circuit]

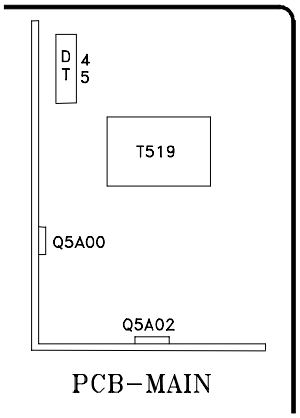
3. High Voltage Control

Purpose: To set the CRTs anode voltages

Symptom: Dark picture.

Measuring Instrument	DC Voltmeter
Test Point	+ Lead to DT #5 - Lead to DT #4
Ext. Trigger	------
Measuring Range	-------
Input Signal	Monoscope
Input Terminal	Video Input

1. Supply a Monoscope signal to a Video Input.
2. Connect a DC Voltmeter to pins 4 and 5 of the DT connector.
   - Positive Lead to DT #5
   - Negative Lead to DT #4
3. Set Contrast to maximum, and Brightness to the center position.
4. Enter the Service Mode and check that Item "7 BRTH" under the VCJ Function is set at 31.
5. Press Enter and Exit the Service Mode.
6. Enter the Convergence Mode and select the Conv. Misc Function.
7. Select Item "1 HVOL" (screen goes black).
8. Adjust "1 HVOL" for 0.15 ±0.01 V on the meter.
9. Exit the Convergence Mode and verify that the meter reading does not exceed 0.85V.



PCB−MAIN

Note: *HV must be reset if E2RESET is activated.*

SERVICE MODE

Activate …….. MENU-0-1-5-7
Function …..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

CONVERGENCE MODE

Activate ……..MENU-0-1-5-9
Misc. ……..……"6"
Coarse……..……"5"
Fine ……..."4"
Color (R,G B or DF)...AUDIO
Item No……..VIDEO
Adjust/Move…….ADJUST
Cursor Toggle……..ENTER
Save & Exit…..MENU (twice)

[Focus]

4. Dynamic Focus

Purpose: To improve edge focus

Symptom: Blurred picture at the edges of the screen.

Measuring Instrument	------
Test Point	--------
Ext. Trigger	------
Measuring Range	-------
Input Signal	Monoscope
Input Terminal	Video Input

1. Supply a Monoscope signal to the Video Input.
2. Enter the Coarse Convergence Mode and select the DF Function.
3. Verify that the data values are set as indicated in the table below.
4. Exit the Convergence Mode.

DF Function

Item	Abbrev.	Data
0	DFH	200
1	DFV	100

CONVERGENCE MODE

Activate ……..MENU-0-1-5-9
Misc. ……..……"6"
Coarse……..……"5"
Fine ……..."4"
Color (R,G B or DF)...AUDIO
Item No……..VIDEO
Adjust/Move…….ADJUST
Cursor Toggle……..ENTER
Save & Exit…..MENU (twice)

[Focus]

5. Electrostatic Focus

Purpose: To set focus to the optimum point.

Symptom: Blurred picture.

Measuring Instrument	--------
Test Point	RQ Connector
Ext. Trigger	------
Measuring Range	-------
Input Signal	Monoscope/Crosshatch
Input Terminal	Video Input

CONVERGENCE MODE (MENU-0-1-5-9)

COLOR	PRESS
RED	1
GREEN	2
BLUE	3

Note: *These adjustments must be performed after Sub Contrast Adjustment.*

General

1. Reset the AV Functions
2. Red, green or blue rasters can be activated by using the Convergence Mode (Table 1).

Electrostatic Focus

1. Supply a **Monoscope** signal to the Video Input. (Do Not use a Crosshatch.)
2. Activate a red raster.
3. Adjust the Red VR-FOCUS for optimum focus.
4. Repeat steps 2 and 3 for green and blue rasters.

Focus Verification

1. Supply a **Crosshatch** signal to the Video Input.
2. Verify good focus on the Crosshatch
3. If necessary, readjust focus using the **Monoscope** pattern.

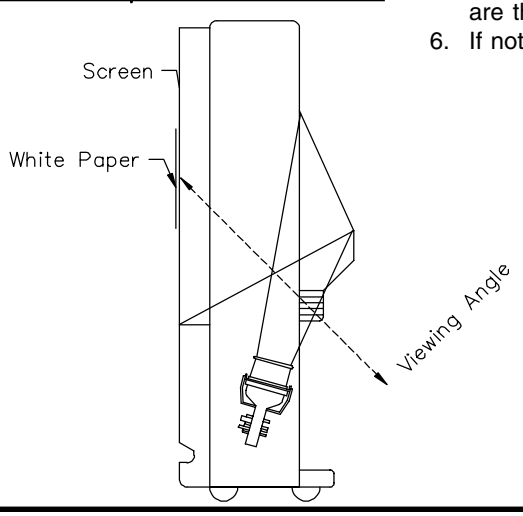
[Focus]

6. Lens Focus

Purpose: To set the Lens position for optimum focus

Symptom: Blurred picture.

Measuring Instrument	--------
Test Point	--------
Ext. Trigger	------
Measuring Range	-------
Input Signal	Monoscope
Input Terminal	Video Input



Note: *This adjustment must follow item 6 (Electrostatic Focus). Perform this adjustment for RED, GREEN, and BLUE monochrome pictures.*

1. Supply a VIDEO signal (Monoscope).
2. Cover the Red and Blue Lens (producing a green raster).
3. Adjust the Green Lens for best focus at the center of the Monoscope pattern.
   Note: *Attach a white paper to the screen center. During adjustment, observe the picture on the screen from inside for easier adjustment.*
4. Repeat Steps 2 and 3 for the Red and Blue monochrome pictures.
5. Supply a crosshatch pattern and confirm the crosshatch lines at all four sides are the same width.
6. If not, check the Centering and Static Convergence adjustments.

[CRT Circuit]

7. CRT Cutoff

Purpose: To set the cutoff point for all three CRTs.

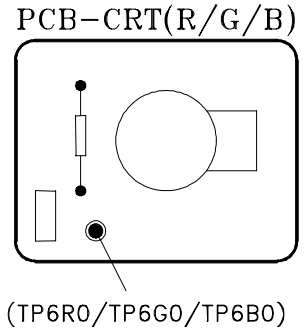
Symptom: Monchrome has a color tint, or incorrect brightness.

Measuring Instrument	Oscilloscope
Test Point	TP6R, TP6G, TP6B
Ext. Trigger	------
Measuring Range	50V per division/ 2 msec
Input Signal	None
Input Terminal	Video Input

1. Select an External Input with no signal.
2. Enter the Service Mode, VCJ Function.
3. Set the data to the values given for the Items listed in the Table.
4. Connect the oscilloscope to TP6R.
5. Adjust the Red SCREEN VR so the black level is 200V, as shown below, or to 206 ±1VDC using a DC Voltmeter.
6. Repeat Steps 4 and 5 to set the Blue and Green SCREEN VRs, using TP6G and TP6B.

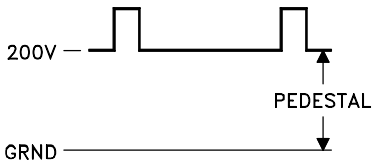
Note: *The White Balance Adjustment must be performed after Cutoff Adjustment.*

SERVICE MODE
Activate …….. MENU-0-1-5-7
Function ……..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)



VCJ Function

ITEM	ABBR.	DATA
7	BRTH	31
8	CTRH	7
9	CTGH	10
10	CTBH	7



[CRT Circuit]

8. White Balance (High Color Temperature)

Purpose: To set the CRTs white level

Symptom: Monchrome has a color tint.

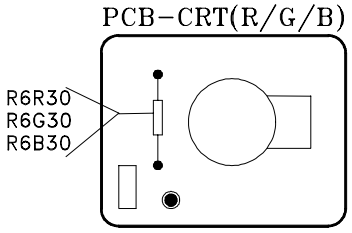
Measuring Instrument	DC Meter
Test Point	R6G30, R6B30
Ext. Trigger	------
Measuring Range	-------
Input Signal	Full White Raster
Input Terminal	Video Input

Note: *This adjustment must be performed after the CRT Cutoff and Focus Adjustments.*

High Color Temperature White Balance

1. Supply a Full White Raster signal to the Video Input.
2. Enter the Service Mode, VCJ Function.
3. Adjust Items "11 RDRH" and "13 BDRH" for optimum white at the center of the screen.
   Note: *If the Cutoff level changes during the adjustment, use Items "8 CTRH" and "10 CTBH" to touch up the Cutoff level. Then readjust "RDRH" and "BDRH".*
4. Save data and exit the Service Mode.
5. Use a DC Current Meter to measure each CRT's current.
   - The meters internal resistance must be less than 30 Ohms.
   - Lead length must be less than 30 CM.
6. Connect the meter, in sequence, across each of the following resistors to read the current for that respective CRT.
   - Green CRT ... across R6G30
   - Blue CRT ..... across R6B30
7. The Green and Blue CRT current **must not exceed** the values given in Table 1.

SERVICE MODE
Activate …….. MENU-0-1-5-7
Function ……..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)



Maximun CRT Current

CRT	CURRENT
Green	580 ua
Blue	530 ua

Table 1

[CRT Circuit]

9. White Balance (Low Color Temperature)

Purpose: To set the CRTs white level at Low Color Temperature.

Symptom: Monchrome has a color tint.

Measuring Instrument	--------
Test Point	--------
Ext. Trigger	------
Measuring Range	-------
Input Signal	Full White Raster
Input Terminal	Video Input

Note: *This adjustment should be performed after the High temperature White Balance Adjustment.*

Low Color Temperature White Balance

1. Supply a Full White Raster signal to the Video Input.
2. Enter the Service Mode, VCJ Function.
3. Adjust Item "17 RDRL" and "18 BDRL" for optimum white at the center of the picture.
   Note: *If the Cutoff level changes during the adjustment, use Items "14 CTRL" and "16 CTBL" to touch up the Cutoff level. Then readjust "RFRL" and "BDRL".*
4. Save data and exit the Service Mode.

SERVICE MODE

Activate …….. MENU-0-1-5-7
Function ……..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..…ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

[Video Circuit]

10. Black Level

Purpose: To set black level of the picture.

Symptom: Excessive or insufficient contrast.

Measuring Instrument	--------
Test Point	--------
Ext. Trigger	------
Measuring Range	-------
Input Signal	Monoscope
Input Terminal	Video Input

Note: *This adjustment should be performed after the Cutoff and White Balance Adjustments.*

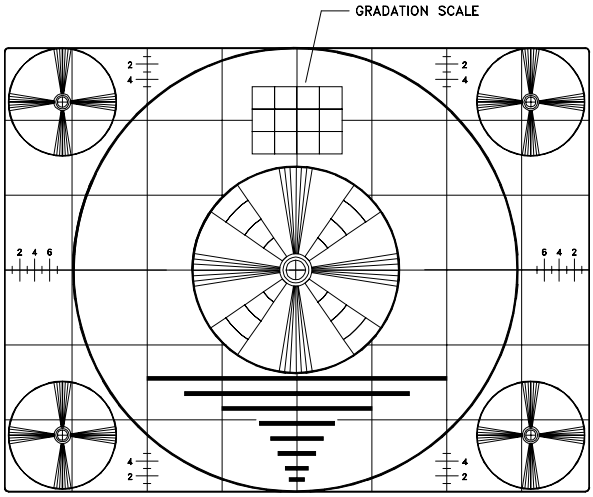
1. Supply a Monoscope signal to the Video Input.
2. Enter the Service Mode, VCJ Function.
3. Adjust Item "7 BRTH" so the 0% and 10% gradation levels on the Monoscope pattern are the same. (Data should be within 31 ±4 range)
4. Save the data and exit the Service Mode.

SERVICE MODE

Activate …….. MENU-0-1-5-7
Function ……..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..…ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

40%	**30%**	**20%**	**10%**
50%	**0%**	**0%**	**0%**
60%	**70%**	**80%**	**90%**

GRADATION SCALE



[Video Circuit]

11. Sub Contrast

Purpose: To set the beam current to its' optimum level.

Symptom: Excessive or insufficient contrast.

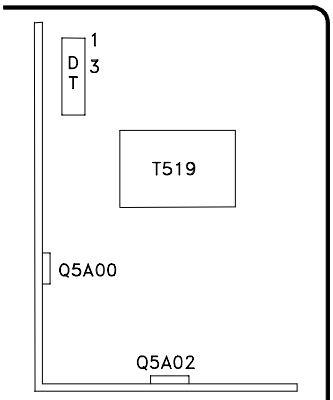
Measuring Instrument	DC milliammeter
Test Point	+ DT #3 - DT #1
Ext. Trigger	------
Measuring Range	3 MA
Input Signal	Grayscale
Input Terminal	Video Input

Note: *This adjustment must follow the Black Level Adjustment.*

1. Supply a Grayscale signal to the Video Input.
2. Enter the Service Mode, VCJ Function.
3. Select Item "1 SCT", before going to Step 4.
4. Connect the DC milliammeter to the DT connector.
   - Positive lead to pin 3
   - Negative lead to pin 1
5. Adjust Item "1 SCT" to set the total CRT current value to 860 ±15ua.
6. Disconnect the meter.
7. Save data and exit the Service Mode.

SERVICE MODE

Activate …….. MENU-0-1-5-7
Function …..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)



PCB−MAIN

[PIP Circuit]

12. Color and Tint (PIP Insert Picture)

Purpose: To match the main and sub pictures color.

Symptom: Different color between the main and sub pictures.

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	Color Bars
Input Terminal	Video or RF Input

1. Supply a Color Bar signal to the Video or RF Input.
2. Select the Color Bars as the source for the main picture (Input button).
3. Activate the single insert PIP mode .
4. Select the Color Bars as the PIP source.
5. Exit the PIP mode (PIP button)
6. Enter the Service Mode, PIP Function.
7. Select Item "3 SCL1" (the single insert is displayed)
8. Use Items "2 CSAT" and "1 HUE" to match the color of the sub picture to that of the main picture.
9. Save data and exit the Service Mode.

SERVICE MODE

Activate …….. MENU-0-1-5-7
Function …..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

[Cb, Cr Circuit]

13. Cb, Cr Offset

Purpose: To match the match grays between color and monochrome pictures.

Symptom: Grays have a color tint.

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	White Raster @ 25%
Input Terminal	NTSC Input

1. Supply an NTSC White Raster with 25% luminance.
2. Activate the Service Mode, VCJ Function.
3. Set the data for item “30 COLH” to 63.
4. Adjust items “23 CBOF” and “24 CROF” for optimum gray.
5. Set the data for item “30 COLH” back to 31.
6. Save the data and exit the Service Mode.

SERVICE MODE

Activate …….. MENU-0-1-5-7
Function ……..AUDIO
Item No. ……..VIDEO
Adjust Data ……ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

[On Screen Display Circuit]

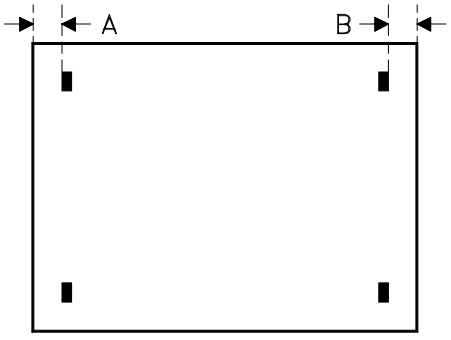
14. Character Position

Purpose: To position the on-screen display.

Symptom: On-screen display is not positioned correctly.

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	Monoscope
Input Terminal	RF or Video

1. Supply a Monoscope signal to the Video or RF Input.
2. Select the Monoscope as the source for the main picture (Input button).
3. Activate the Service Mode, HR Function.
4. Use the Adjust Right/Left buttons to center the display horizontally. (A = B)
5. Save data and exit the Service Mode.



SERVICE MODE

Activate …….. MENU-0-1-5-7
Function ……..AUDIO
Item No. ……..VIDEO
Adjust Data ……ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

[Defl/Conv Circuits]	**Purpose:** To preset data values controlling raster geometry.
15. Geometry Preset	**Symptom:** Raster Distortion

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	NTSC RF or Video
Input Terminal	Video or RF Input

Note: *This procedure us usually only necessary if:*
- *An E2PROM is replaced in the Control or Convergence circuits.*
- *E2RESET or Convergence Reset has been activated.*

Deflection Circuit

1. Supply NTSC Video signal to the Video or RF Input.
2. Select the NTSC signal as the source (Input button).
3. Enter the Service Mode, VCJ Function.
4. Insure all data values correspond to those in the VCJ Table shown in *Table 1.*
5. Save the data and exit the Service Mode.

CONVERGENCE MODE

Activate ……..MENU-0-1-5-9
Misc. ……"6"
Coarse……"5"
Fine ……"4"
Color (R,G B or DF)...AUDIO
Item No……VIDEO
Adjust/Move…….ADJUST
Cursor Toggle……..ENTER
Save & Exit…..MENU (twice)

SERVICE MODE

Activate …….. MENU-0-1-5-7
Function …..……..AUDIO
Item No. ……VIDEO
Adjust Data ……ADJUST
Save Data …. ……ENTER
Exit ……..MENU (twice)

Convergence Circuit

1. Enter the Convergence Coarse Mode.
2. Set the data in Red, Green and Blue Coarse Convergence Functions to the data values given in *Tables 2, 3 and 4.*
3. Exit the Convergence Mode.

VCJ Function

Item	Abbr.	Data
2	VHGT	31
3	SCOR	7
4	VLIN	7
51	VPOS	31
55	HPOS	34

Table 1

CONV GREEN

Item	Abbr.	Data
1	HSTA*	0
2	VSTA*	0
3	SKEW	0
4	TILT	0
5	HWID	30
6	HLIN	0
7	SPCC	-125
8	HKEY	30
9	TBPC	-230
10	VKEY	-10
11	VWID	0
12	VLIN	0

* Data should not exceed ±100

Table 2

CONV RED

Item	Abbr.	Data
1	HSTA*	100
2	VSTA*	0
3	SKEW	0
4	TILT	0
5	HLIN	-270
6	HWID	-60
7	VKEY	-170
8	VWID	0
9	VLIN	0
10	TPBC	0
11	SDBW	80

* Data should not exceed ±100

Table 3

CONV BLUE

Item	Abbr.	Data
1	HSTA*	-100
2	VSTA*	0
3	SKEW	0
4	TILT	0
5	HLIN	280
6	HWID	-50
7	VKEY	150
8	VWID	0
9	VLIN	0
10	TPBC	0
11	SDBW	-70

* Data should not exceed ±100

Table 4

[Deflection Circuit]

16. Height and Vert. Linearity

Purpose: To set the vertical height and linearity.

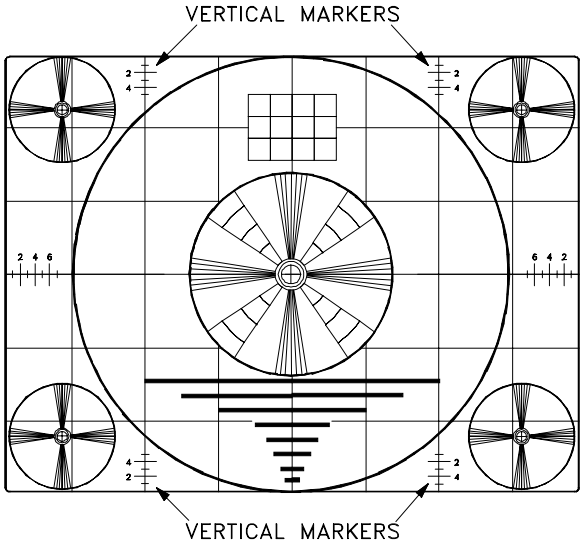
Symptom: Incorrect height and/or vertical non-linearity.

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	Monoscope
Input Terminal	Video or RF Input

SERVICE MODE

Activate …….. MENU-0-1-5-7
Function ……..……..AUDIO
Item No. ……..……VIDEO
Adjust Data ……..ADJUST
Save Data …. ……ENTER
Exit ……...MENU (twice)

1. Supply a Monoscope signal to the Video or RF Input.
2. Activate the Service Mode, VCJ Function.
3. Adjust Item “2 VHT” so the sum of the vertical markers is 4.
4. Adjust Item “4 VLR” so the large Monoscope circle is round.
5. Save the data and exit the Service Mode.



[Convergence Circuit]

17. Static Convergence

Purpose: Converge red, green and blue at the screen center.

Symptom: Color edging over most of the picture.

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	Monoscope/Crosshatch
Input Terminal	Video or RF Input

CONVERGENCE MODE

Activate ……..MENU-0-1-5-9
Misc. ……"6"
Coarse……..…."5"
Fine ……..."4"
Color (R,G B or DF)...AUDIO
Item No……..VIDEO
Adjust/Move…….ADJUST
Cursor Toggle……..ENTER
Save & Exit…..MENU (twice)

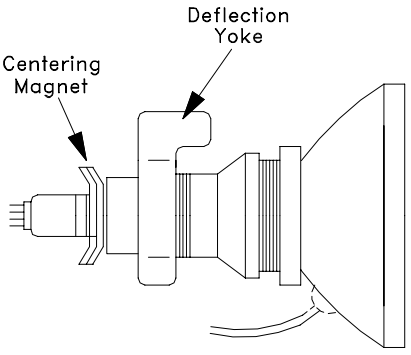
Note: *If not correct, preset Vertical Linearity, Service Mode, VCJ Function, Item “4 VLIN”.*

Preliminary:

Degauss the shield cover and bracket unit of the CRT assembly and chassis sheet metal. Do Not degauss the CPM Assemblies.

Centering and Static Convergence

1. Supply a Monoscope signal to the Video or RF Input.
2. Enter the Coarse Convergence Mode
3. Press “2” (green Monoscope is displayed)
3. Press “7” (removes HSTA and VSTA drive from the Convergence circuit).
4. Use the Green Centering Magnet to center the green monoscope on the screen.
6. Rotate the Green Yoke to correct any tilt.
7. Exit the Convergence Mode.
   Note: If the green raster centering shifts when exiting the Convergence Mode, use Coarse Green Items “1 HSTA” and “2 VSTA” to correct centering.
8. Supply an External Crosshatch Pattern
9. Use the Red Centering Magnet to converge the red crosshatch on the green at the center of the screen, and remove any red tilt by rotating the Red Yoke.
10. Repeat Step 9 for the blue crosshatch, using the Blue Centering Magnet and Blue Yoke.



[Convergence Circuit]

18. Geometry Adjustment

Purpose: To set the Convergence circuit geometry adjustments.

Symptom: Raster distortion at the top, bottom or sides of the picture.

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	Monoscope
Input Terminal	RF or Video

CONVERGENCE MODE

Activate ……..MENU-0-1-5-9
Misc. ……."6"
Coarse……."5"
Fine ……..."4"
Color (R,G B or DF)...AUDIO
Item No……..VIDEO
Adjust/Move…….ADJUST
Cursor Toggle……..ENTER
Save & Exit…..MENU (twice)

Note: *Vertical Height and Vertical Linearity Adjustments must be performed before this adjustment.*

Coarse Adjustment

1. Supply a Monoscope signal to the RF or Video Input.
2. Select the Monoscope as the signal source (Input button).
3. Activate the Convergence Mode, Coarse Green Function
4. Adjust Item "5 HWID" so the sum of the horizontal markers is 7.6.
5. Set the data of the following items for straight crosshatch lines.
   - "3 SKEW" ... Skew
   - "4 TILT" ... Tilt
   - "6 HLIN" ... Horizontal Linearity
   - "7 SPCC" ... Side Pin Cushion Correction
   - "8 HKEY" ... Horizontal Keystone
   - "9 TBPC" ... Top/Bottom Pin Cushion
   - "10 VKEY" ... Vertical Keystone
   - "11 VWID" ... Height
   - "12 VLIN" ... Vertical Linearity.

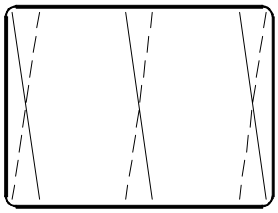
   Note: If the raster centering changes during the adjustments, correct the centering using Items "1 HSTA" and "2 VSTA".

Fine Adjustment

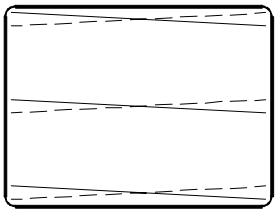
6. Activate the Fine Green Convergence Mode. (Press 4)
7. Use the Cursor to adjust for straight crosshatch lines.
8. Exit the Convergence Mode.

COARSE GREEN ADJUSTMENTS

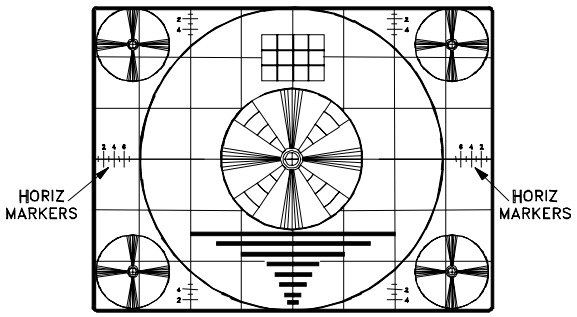
3 SKEW



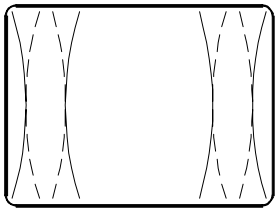
4 TILT



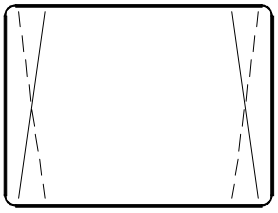
5 HWID



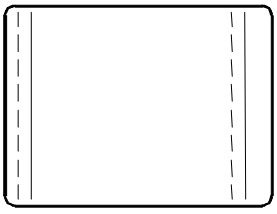
7 SPCC



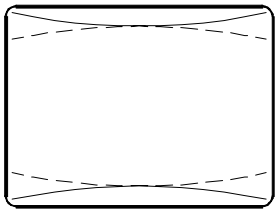
8 HKEY



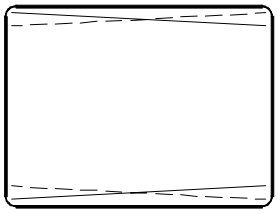
6 HLIN



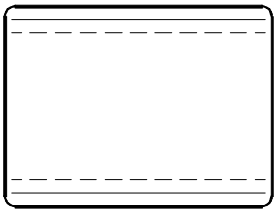
9 TBPC



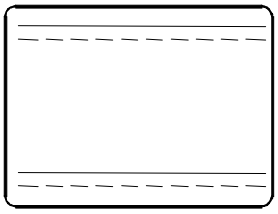
10 VKEY



11 VWID



12 VLIN



[Convergence Circuit]

19: Coarse Convergence

Purpose: To Converge red and blue on green.

Symptom: Color edging at the top, bottom and sides of the picture.

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	None
Input Terminal	Video Input

1. Select an External Input (no signal)
2. Enter the Convergence Mode.
3. Select the Coarse Red Function.
4. Set the Adjustments shown below to converge red on the green.
5. Select the Coarse Blue Function
6. Set the Adjustments shown below to converge blue on the green.
7. Exit the Convergence Mode

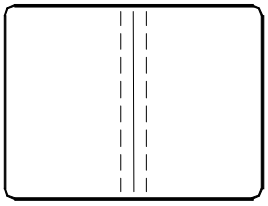
Note: *If Static Convergence shifts, use HSTA and VSTA to correct convergence at the center of the screen. (HSTA and VSTA data values must not exceed 200)*

CONVERGENCE MODE

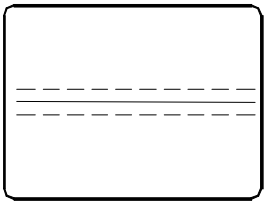
Activate ……..MENU-0-1-5-9
Misc. ……"6"
Coarse……..…..."5"
Fine ……..."4"
Color (R,G B or DF)...AUDIO
Item No……..…..VIDEO
Adjust/Move…….ADJUST
Cursor Toggle……..ENTER
Save & Exit…..MENU (twice)

COARSE CONVERGENC RED & BLUE ADJUSTMENTS

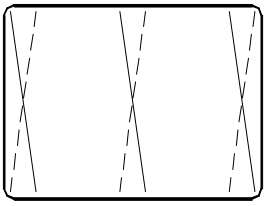
1 HSTA*



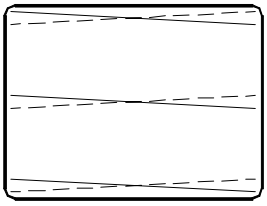
2 VSTA*



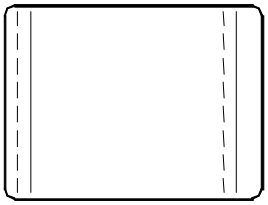
3 SKEW



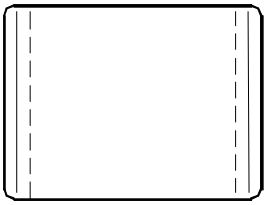
4 TILT



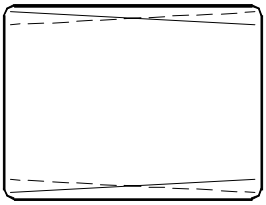
5 HLIN



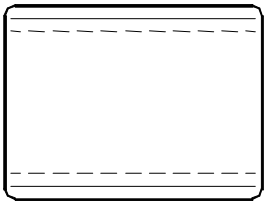
6 HWID



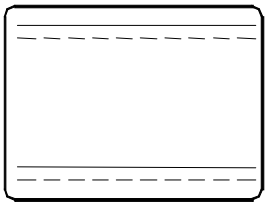
7 VKEY



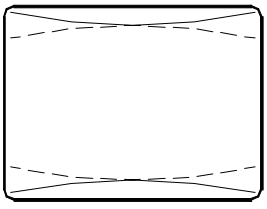
8 VWID



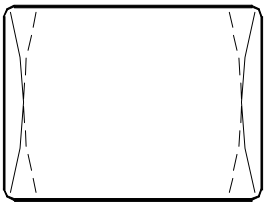
9 VLIN



10 TBPC



11 SDBW



*** Data should not exceed ±100**

[Convergence Circuit]

20. Fine Convergence

Purpose: To Converge red and blue on green.

Symptom: Color edging at the top, bottom and sides of the picture.

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	-----
Input Signal	None
Input Terminal	Video Input

1. Select an External Input (no signal).
2. Enter the Fine Convergence Mode.
3. Select the Fine Red Function.
4. Use the Cursor to converge red on the green.
5. Select the Fine Blue Function.
6. Use the Cursor to converge blue on the green.
7. Exit the Convergence Mode.

CONVERGENCE MODE

Activate ……..MENU-0-1-5-9
Misc. ……..……"6"
Coarse……..…."5"
Fine ……..."4"
Color (R,G B or DF)...AUDIO
Item No……..VIDEO
Adjust/Move…….ADJUST
Cursor Toggle……..ENTER
Save & Exit…..MENU (twice)

CHIP PARTS REPLACEMENT

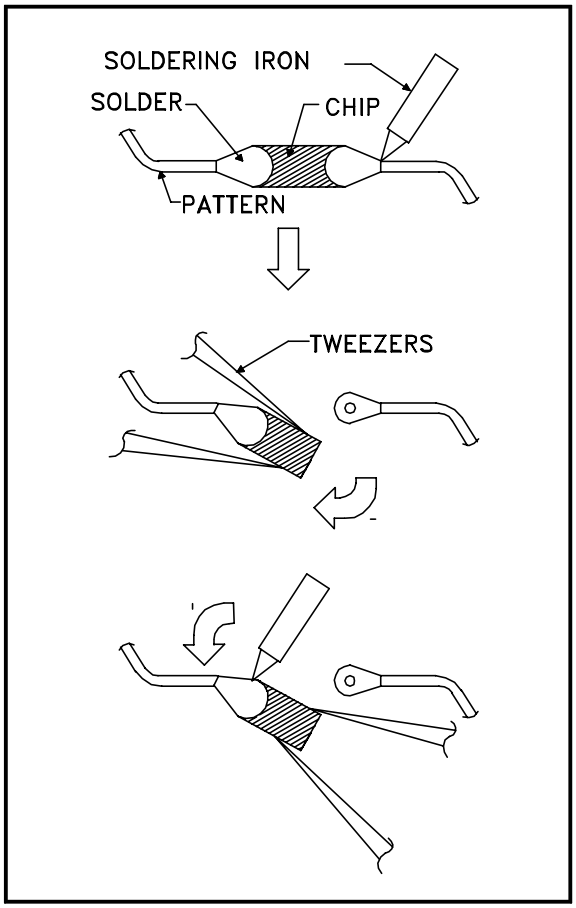
Some resistors, shorting jumpers (0 Ohm resistors), ceramic capacitors, transistors and diodes are chip parts. The following precautions should be taken when replacing these parts.

Cautions:

1. Use a fine tipped, well insulated soldering iron (approximately 30 watts), and tweezers.
2. Melt the solder and remove the chip parts carefully so as not to tear the copper foil from the printed circuit board.
3. Discard removed chips; do not reuse them.
4. Do not apply heat for more than 3 (three) seconds to new chip parts.
5. Avoid using a rubbing stroke when soldering.
6. Take care not to scratch, or damage the chip parts when soldering.
7. Supplementary cementing is not required.

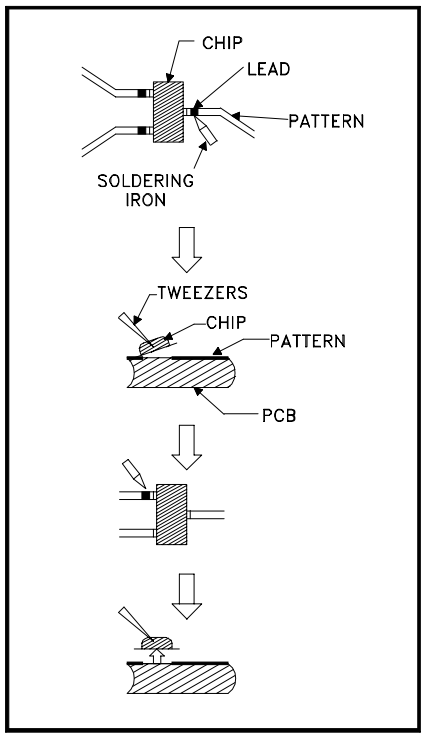
Chip Parts Removal (Resistors, Capacitors, etc.)

1. Grasp the part with tweezers. Melt the solder at both sides alternately, and remove one side of the part with a twisting motion.
2. Melt the solder at the other side and remove the part.



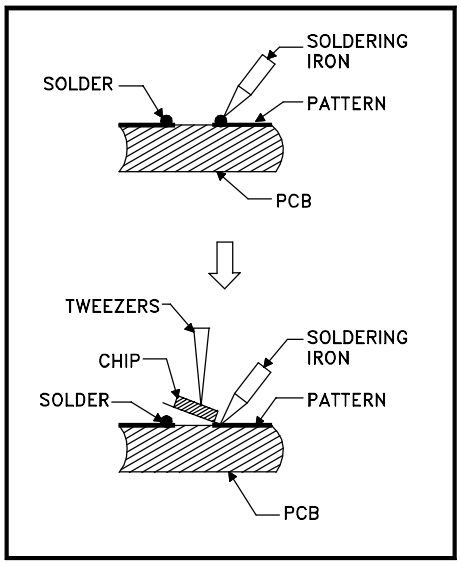
Chip Parts Removal (Transistors)

1. Melt the solder of one lead and lift the side of that lead upward.
2. Simultaneously melt the solder of the other two leads and lift the part from the PCB.



Replacement

1. Presolder the contact points on the circuit pattern.
2. Press the part downward with tweezers and apply the soldering iron as shown.



RELACEMENT PARTS

Parts Ordering
To expedite delivery of replacement parts orders, specify the following:

1. Model Number/Serial Number
2. Part Number and description
3. Quantity

Note: Unless complete information is supplied, delay in processing of orders will result.

Critical and Warranty Parts Designation

Critical Electrical Components are indicated by **Bold Type** in the Parts List, and in the schematic diagrams by shading.

Warranty Return Parts are indicated in the Parts List with an **(*)**.

Parts Tolerance Codes
Refer to the following chart for tolerance characteristics of electrical components.

MARK	B	C	D	F	G	J	K
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10

MARK	M	N	V	X	Z	P	Q
Tolerance %	± 20	± 30	± 10	+ 40 -20	+ 80 -20	+ 100 - 0	+ 30 -10

MARK	M	N	V	X	Z
Tolerance (pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

Model Abbreviations

45609	VS-45609
50609	VS-50609
55609	VS-55609
60609	VS-60609
60719	VS-60719
70709	VS-70709

QUICK REFERENCE FOR COMMON REPLACEMENT PARTS

CRT ASSEMBLIES

MODEL	ASSY-CRT-RED	ASSY-CRT-GREEN	ASSY-CRT-BLUE
VS-45609	**251C210010**	**251C210020**	**251C210030**
VS-50609	**251C210040**	**251C210050**	**251C210060**
VS-55609	**251C210070**	**251C210080**	**251C210090**
VS-60609	**251C211010**	**251C211020**	**251C211030**
VS-60719	**251C211040**	**251C211050**	**251C211060**
VS-70709	**251C211070**	**251C211080**	**251C211090**

REMOTE CONTROL

290P103030	REMOTE CONTROL	45609 / 50609 / 55609 / 60609
290P103040	REMOTE CONTROL	60719 / 70709

HIGH VOLTAGE / DEFLECTION COMPONENTS

Q5A02	**261P120010**	**HV-OUT TRANSISTOR**	**2SC5689**
T551	**334P278030**	**TRANS-FLYBACK**	
	920P016010	**HV-BLOCK**	
	129P059050	VR-FOCUS	
	330P284010	**DEFL-YOKE**	
	453B035010	**CAP-ANODE (Red)**	
	453B035020	**CAP-ANODE (Green & Blue)**	

MISCELLANEOUS

MODEL	MIRROR	LENTICULAR SCREEN	FRESNEL LENS
VS-45609	767D055010	491P075010	491P076010
VS-50609	767D055020	491P099010	491P100010
VS-55609	767D055030	491P101010	491P102010
VS-60609	767D048050	491P109010	491P110010
VS-60719	767D048050	491P109010	491P110010
VS-70709	767D048080	491P107020	491P108020

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
		TUBES	
*	**251C210010**	**ASSY-CRT-RED**	**1**
*	**251C210020**	**ASSY-CRT-GREEN**	**1**
*	**251C210030**	**ASSY-CRT-BLUE**	**1**
*	**251C210040**	**ASSY-CRT-RED**	**2**
*	**251C210050**	**ASSY-CRT-GREEN**	**2**
*	**251C210060**	**ASSY-CRT-BLUE**	**2**
*	**251C210070**	**ASSY-CRT-RED**	**3**
*	**251C210080**	**ASSY-CRT-GREEN**	**3**
*	**251C210090**	**ASSY-CRT-BLUE**	**3**
*	**251C211010**	**ASSY-CRT-RED**	**4**
*	**251C211020**	**ASSY-CRT-GREEN**	**4**
*	**251C211030**	**ASSY-CRT-BLUE**	**4**
*	**251C211040**	**ASSY-CRT-RED**	**5**
*	**251C211050**	**ASSY-CRT-GREEN**	**5**
*	**251C211060**	**ASSY-CRT-BLUE**	**5**
*	**251C211070**	**ASSY-CRT-RED**	**6**
*	**251C211080**	**ASSY-CRT-GREEN**	**6**
*	**251C211090**	**ASSY-CRT-BLUE**	**6**
		INTEGRATED CIRCUITS	
IC2C01	275P496010	IC-C-MOS - UPD64082GF-3BA	
IC2C02	275P531010	IC-C-MOS - MSM54V16258B-45TS-K	
IC2E00	272P951010	IC - BA7046F	
IC2K01	270P623010	IC - CXA2069Q	
IC2P20	267P131010	HIC - SI-3033C	
IC2P30	270P210010	IC - NJM7809FA/AN7809F	
IC2V00	270P851010	IC - CXA2142BS	
IC2V40	274P378010	IC-C-MOS - TC74HC4053AF	
IC2Y00	270P852010	IC - TDA9178TD	
IC2Y70	272P773010	IC - SN74LS221NS	
IC301	270P750010	IC - LA4663	
IC3A01	270P467010	IC - TDA9855	
IC451	270P064030	IC - LA7845N	
IC501	**272P237010**	**IC - LA6324N**	
IC502	**266P154010**	**IC - UPC393C**	
IC503	**270P704010**	**IC - LM4040BIZ-10.0**	
IC6P00	275P593010	IC-C-MOS - SDA9589X	
IC6Y50	272P302010	IC - PA0030	
IC6Y51	270P650010	IC - MM1031XM	
IC700	**275P363040**	**IC-C-MOS - M306V0EEFP**	
IC701	275P222020	IC-C-MOS - M24C32MN6T	
IC702	266P130060	IC - PST993E	
IC703	274P378010	IC-C-MOS - TC74HC4053AF	
IC704	275P656010	IC-C-MOS - TC7W02FU	
IC7K21	270P831010	IC-C-MOS - OPA2350PA	5&6
IC800	275P595010	IC-C-MOS - CM0022AF	
IC801	275P222020	IC-C-MOS - M24C32MN6T	
IC802	270P751010	IC - TL084CD	
IC803	270P751010	IC - TL084CD	
IC804	270P751010	IC - TL084CD	
IC805	270P817010	IC - L4931CDT33-TR	
IC8C00	267P155010	HIC - STK393-110	
IC8E01	263P408020	IC-C-MOS - UPD6376GS	
IC8E02	263P408020	IC-C-MOS - UPD6376GS	
IC8E03	263P408020	IC-C-MOS - UPD6376GS	
IC935	270P472060	IC - NJM7805FA	
IC936	270P210010	IC - NJM7809FA/AN7809F	
IC951	**267P140020**	**HIC - STR-F6628**	
IC952	**267P126010**	**HIC - SE130N**	
IC9A01	270P472060	IC - NJM7805FA	

TRANSISTORS

TR-CHIP Type (Listed by Generic Number)

Type	Part No.	Description
TR-CHIP	260P807030	DTC124EKAT146
TR-CHIP	260P817030	2SA1037K-S
TR-CHIP	260P818030	2SC2412K-S
TR-CHIP	261P810010	2SK664

Conventional Transistors (By Ref#)

Ref#	Part No.	Description	[#]
Q401	260P559030	TR - 2SC1740S-S	
Q501	260P420010	TR - 2SC2073-B,C	
Q502	260P559030	TR - 2SC1740S-S	
Q521	260P559030	TR - 2SC1740S-S	
Q522	260P559030	TR - 2SC1740S-S	
Q523	260P560040	TR - 2SA933S-S	
Q524	260P559030	TR - 2SC1740S-S	
Q530	260P560040	TR - 2SA933S-S	
Q531	260P422010	TR - 2SC2482	
Q532	260P422010	TR - 2SC2482	
Q533	260P559030	TR - 2SC1740S-S	
Q5A00	261P120010	TR - 2SC5689	
Q5A02	**261P120010**	**TR - 2SC5689**	
Q5K00	260P664030	TR - 2SC4636	
Q5K02	260P559050	TR - 2SC1740S-E	
Q5K03	260P560040	TR - 2SA933S-S	
Q600	260P560040	TR - 2SA933S-S	
Q6B00	260P385020	TR - 2SC2229-Y	
Q6B01	261P004010	TR - 2SC3271F-N,P	
Q6B02	260P469030	TR - 2SA1321	
Q6B03	260P307020	TR - 2SC3334	
Q6G00	260P385020	TR - 2SC2229-Y	
Q6G01	261P004010	TR - 2SC3271F-N,P	
Q6G02	260P469030	TR - 2SA1321	
Q6G03	260P307020	TR - 2SC3334	
Q6R00	260P385020	TR - 2SC2229-Y	
Q6R01	261P004010	TR - 2SC3271F-N,P	
Q6R02	260P469030	TR - 2SA1321	
Q6R03	260P307020	TR - 2SC3334	
Q7A91	261P114010	TR - 2SA1585STPR	5&6
Q7K21	260P559030	TR - 2SC1740S-S	5&6
Q971	**260P559030**	**TR - 2SC1740S-S**	
Q972	260C676040	TR - 2SC3311A-R,S	
Q973	260P559030	TR - 2SC1740S-S	
Q975	260P560040	TR - 2SA933S-S	
Q979	260P416030	TR - 2SC2274-F,K-F	
Q980	260P559030	TR - 2SC1740S-S	

DIODES

D2J11	264P485060	DIODE - RD7.5FB2
D2J12	264P485060	DIODE - RD7.5FB2
D2J21	264P485060	DIODE - RD7.5FB2
D2J22	264P485060	DIODE - RD7.5FB2
D2K19	264P485060	DIODE - RD7.5FB2
D2K21	264P485060	DIODE - RD7.5FB2
D2K23	264P485060	DIODE - RD7.5FB2

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
D2V00	264P425010	DIODE - 1SS88	
D2V01	264P486080	DIODE - RD10FB1	
D2W00	264P828010	D-CHIP - DAN202U/MA142WK	
D2W01	264P828010	D-CHIP - DAN202U/MA142WK	
D2W02	264P828010	D-CHIP - DAN202U/MA142WK	
D2W03	264P828010	D-CHIP - DAN202U/MA142WK	
D2W04	264P828010	D-CHIP - DAN202U/MA142WK	
D451	264D056020	DIODE - S5500D/EM1Z/ERB12-02RK	
D452	264D056020	DIODE - S5500D/EM1Z/ERB12-02RK	
D453	264D056020	DIODE - S5500D/EM1Z/ERB12-02RK	
D454	264P483070	DIODE - RD5.1FB1	
D455	264P045040	DIODE - 1S24710M	
D456	264P483070	DIODE - RD5.1FB1	
D457	264P045040	DIODE - 1S24710M	
D511	264P045040	DIODE - 1S24710M	
D520	264P358070	DIODE - RU 4AM	
D521	264P102020	DIODE - RU3B	
D522	264P358070	DIODE - RU 4AM	
D523	264P492020	DIODE - RD33FB1	
D524	264P488030	DIODE - RD13FB2	
D525	264P045040	DIODE - 1S24710M	
D530	264P045040	DIODE - 1S24710M	
D542	**264P045040**	**DIODE - 1S24710M**	
D543	**264P045040**	**DIODE - 1S24710M**	
D544	264P485060	DIODE - RD7.5FB2	
D557	264P295020	DIODE - ES1C	
D571	264P045040	DIODE - 1S24710M	
D580	264P045040	DIODE - 1S24710M	
D5A1	264P489070	DIODE - RD18FB3	
D5K01	264P528030	DIODE - RP1H	
D5K03	264P724010	DIODE - STF14	
D5K10	264P528030	DIODE - RP1H	
D600	264P457080	DIODE - RD3.3EB1	
D6B01	264P501050	DIODE - HZ3BLL	
D6B02	264P501040	DIODE - HZ3ALL	
D6B03	264P045040	DIODE - 1S24710M	
D6B04	264P045040	DIODE - 1S24710M	
D6G03	264P045040	DIODE - 1S24710M	
D6G04	264P045040	DIODE - 1S24710M	
D6R03	264P045040	DIODE - 1S24710M	
D6R04	264P045040	DIODE - 1S24710M	
D746	264P484040	DIODE - RD5.6FB3	
D747	264P484040	DIODE - RD5.6FB3	
D794	264P484040	DIODE - RD5.6FB3	
D795	264P484040	DIODE - RD5.6FB3	
D797	264P484040	DIODE - RD5.6FB3	
D7A00	264P212020	D-LED - LN31GPH	
D7G34	264P425010	DIODE - 1SS88	
D7G35	264P425010	DIODE - 1SS88	
D7K21	268P100010	PHOTO DIODE - SFH235FA	5&6
D7K22	264P045040	DIODE - 1S24710M	5&6
D8C01	264P486060	DIODE - RD9.1FB3	
D8C02	264P486060	DIODE - RD9.1FB3	
D8D00	264P045040	DIODE - 1S24710M	
D951	264P721010	DIODE - TS6B06G	
D952	264P508040	DIODE - S1WB(A)60	
D953	264P521040	DIODE - EU1A	
D955	264P521040	DIODE - EU1A	
D956	264P527020	DIODE - AK04	
D957	264P045040	DIODE - 1S24710M	
D958	264P469050	DIODE - EQA02-25C/RD27EB3	
D970	264P722010	DIODE - SF64	
D971	264P588010	DIODE - FML-G16S	
D972	264P722010	DIODE - SF64	
D973	264P045040	DIODE - 1S24710M	
D974	264P566010	DIODE - FMP-G12S	
D975	264P045040	DIODE - 1S24710M	
D976	264P484060	DIODE - RD6.2FB1	
D978	264P045040	DIODE - 1S24710M	
D979	264P045040	DIODE - 1S24710M	
D980	264P045040	DIODE - 1S24710M	
D981	264D056020	DIODE - S5500D/EM1Z/ERB12-02RK	
D982	264P045040	DIODE - 1S24710M	
D983	264P573020	DIODE - EG1A	
D984	264P045040	DIODE - 1S24710M	
D9A01	264D056020	DIODE - S5500D/EM1Z/ERB12-02RK	

COILS

L1A05	325C241030	COIL-CHIP - 10MH-K	
L1A07	325C241030	COIL-CHIP - 10MH-K	
L1A13	325C241030	COIL-CHIP - 10MH-K	
L1B06	325C241030	COIL-CHIP - 10MH-K	
L1B07	325C241030	COIL-CHIP - 10MH-K	
L1B13	325C241030	COIL-CHIP - 10MH-K	
L1R01	325C241030	COIL-CHIP - 10MH-K	
L2A01	321C114010	COIL-RF - 2200MH-J	
L2B01	321C114010	COIL-RF - 2200MH-J	
L2C01	325C146050	COIL-CHIP - 15MH-J	
L2C03	409P777080	EMI-F-CHIP - BLM21P221S	
L2C05	409P777080	EMI-F-CHIP - BLM21P221S	
L2C06	409P777080	EMI-F-CHIP - BLM21P221S	
L2D01	325C241030	COIL-CHIP - 10MH-K	
L2D03	325C241030	COIL-CHIP - 10MH-K	
L2D20	325C241030	COIL-CHIP - 10MH-K	
L2D30	325C241030	COIL-CHIP - 10MH-K	
L2E00	325C241030	COIL-CHIP - 10MH-K	
L2K42	409P864010	EMI-F-CHIP - ACB2012M600/BLM21A601S	
L2V00	325C241030	COIL-CHIP - 10MH-K	
L2V01	325C241030	COIL-CHIP - 10MH-K	
L2V03	409P864010	EMI-F-CHIP - ACB2012M600/BLM21A601S	
L2V40	325C241030	COIL-CHIP - 10MH-K	
L2V50	325C241030	COIL-CHIP - 10MH-K	
L2Y20	325C241030	COIL-CHIP - 10MH-K	
L2Y30	325C241030	COIL-CHIP - 10MH-K	
L2Y70	325C241030	COIL-CHIP - 10MH-K	
L452	321C130010	COIL-RF - 2MH	
L511	321C130090	COIL-RF - 10MH-K	
L514	411D009020	CORE-FERRITE	
L516	411P001010	LEAD-FERRITE	
L517	**351P220010**	**COIL-CHOKE - ZTS6620**	
L521	411D009020	CORE-FERRITE	
L522	333P049090	COIL-HORIZ-LIN	
L6B00	325C402020	COIL-PEAKING - 56MH-J	
L6B01	325C402020	COIL-PEAKING - 56MH-J	
L6B10	325C461040	COIL-PEAKING - 12MH-K	
L6G00	325C402020	COIL-PEAKING - 56MH-J	
L6G01	325C402020	COIL-PEAKING - 56MH-J	
L6G10	325C461040	COIL-PEAKING - 12MH-K	
L6P00	409P777080	EMI-F-CHIP - BLM21P221S	
L6P01	325C241030	COIL-CHIP - 10MH-K	

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
L6P02	325C241030	COIL-CHIP - 10MH-K	
L6P03	409P777080	EMI-F-CHIP - BLM21P221S	
L6R00	325C402020	COIL-PEAKING - 56MH-J	
L6R01	325C402020	COIL-PEAKING - 56MH-J	
L6R10	325C461040	COIL-PEAKING - 12MH-K	
L6Y10	321C114010	COIL-RF - 2200MH-J	
L6Y50	325C121030	COIL-PEAKING - 10MH-K	
L6Y51	325C167040	COIL-PEAKING - 82MH-J	
L717	325C146000	COIL-CHIP - 5.6MH-J	
L77A1	325C121030	COIL-PEAKING - 10MH-K	
L7A19	325C241030	COIL-CHIP - 10MH-K	
L7A62	325C241030	COIL-CHIP - 10MH-K	
L7A99	325C241030	COIL-CHIP - 10MH-K	
L8D01	325C241030	COIL-CHIP - 10MH-K	
L8D02	325C241030	COIL-CHIP - 10MH-K	
L8D03	325C241030	COIL-CHIP - 10MH-K	
L8D04	325C241030	COIL-CHIP - 10MH-K	
L8E01	325C241030	COIL-CHIP - 10MH-K	
L8E02	325C241030	COIL-CHIP - 10MH-K	
L901	**351P218010**	**LINE-FILTER - ELF24V030A**	
L902	**351P219010**	**LINE-FILTER - ELF15N030A**	
L960	321C141010	COIL-RF - 6.8MH-M	
L961	321C141010	COIL-RF - 6.8MH-M	
L963	411D009020	CORE-FERRITE	
L964	411D009020	CORE-FERRITE	
L965	411D009020	CORE-FERRITE	
L971	321C141010	COIL-RF - 6.8MH-M	
L972	321C141010	COIL-RF - 6.8MH-M	
L973	321C130050	COIL-RF - 4.7MH-K	
L974	411D009020	CORE-FERRITE	
L980	411P012010	BEAD-FERRITE	
L981	321C141010	COIL-RF - 6.8MH-M	
L982	411P001010	LEAD-FERRITE	

TRANSFORMERS

T501	349P122080	TRANS-SIDE-PCC	
T519	349P219010	TRANS-HORIZ	
T531	336P043010	TRANS-HORIZ-DRIVE	
T532	336P043010	TRANS-HORIZ-DRIVE	
T551	**334P278030**	**TRANS-FLYBACK**	
T951	**350P787010**	**TRANS-POWER**	
T952	**350P779010**	**TRANS-POWER**	

VARIABLE RESISTORS

	129P059050	VR-FOCUS - MHF116-50W	
RV901	**265P100010**	**VARISTOR - ERZV10D271/ERZVEAV271**	

RESISTORS

R-M-CHIP Type Resistors (Listed by Value)

Value	Part No.	Value	Part No.
1/10W 0OHM	103P409050	1/10W 1.3K-F	103P472080
1/16W 0OHM	103P509050	1/10W 1.5K-F	103P472090
1/10W 10-J	103P400010	1/10W 1.5K-J	103P402070
1/16W 10-J	103P500010	1/16W 1.5K-J	103P502070
1/10W 22-J	103P400050	1/10W 1.8K-J	103P402080
1/10W 33-J	103P400070	1/10W 2.2K-J	103P402090
1/10W 39-J	103P400080	1/16W 2.2K-J	103P502090
1/16W 39-J	103P500080	1/10W 2.4K-F	103P473040
1/10W 47-J	103P400090	1/10W 2.7K-J	103P403000

Ref #	Part #	Part Name & Description	[#]

Value	Part No.	Value	Part No.
1/10W 56-J	103P401000	1/10W 3.3K-J	103P403010
1/16W 68-J	103P501010	1/10W 3.9K-J	103P403020
1/10W 75-J	103P409090	1/10W 4.3K-F	103P474000
1/10W 82-J	103P401020	1/10W 4.7K-F	103P474010
1/16W 100-J	103P501030	1/10W 4.7K-J	103P403030
1/10W 100-J	103P401030	1/10W 5.6K-F	103P474030
1/10W 120-J	103P401040	1/10W 5.6K-J	103P403040
1/10W 160-F	103P470060	1/10W 6.8K-J	103P403050
1/10W 180-F	103P470070	1/10W 8.2K-F	103P474070
1/16W 180-J	103P501060	1/10W 8.2K-J	103P403060
1/10W 200-F	103P470080	1/10W 10K-F	103P474090
1/10W 220-F	103P470090	1/10W 10K-J	103P403070
1/10W 220-J	103P401070	1/10W 12K-J	103P403080
1/16W 220-J	103P501070	1/16W 12K-J	103P503080
1/10W 240-F	103P471000	1/10W 15K-F	103P475030
1/10W 330-F	103P471030	1/10W 15K-J	103P403090
1/10W 330-J	103P401090	1/16W 15K-F	103P495030
1/10W 360-F	103P471040	1/16W 15K-J	103P503090
1/10W 390-F	103P471050	1/10W 18K-J	103P404000
1/10W 390-J	103P402000	1/16W 18K-J	103P504000
1/10W 470-F	103P471070	1/16W 22K-F	103P495070
1/10W 470-J	103P402010	1/16W 20K-F	103P495060
1/16W 510-F	103P491080	1/10W 22K-J	103P404010
1/10W 560-F	103P471090	1/10W 27K-J	103P404020
1/16W 560-F	103P491090	1/10W 33K-J	103P404030
1/16W 560-J	103P502020	1/16W 33K-J	103P504030
1/10W 620-F	103P472000	1/10W 39K-J	103P404040
1/10W 680-F	103P472010	1/10W 47K-J	103P404050
1/16W 680-J	103P502030	1/10W 56K-J	103P404060
1/10W 820-F	103P472030	1/10W 68K-J	103P404070
1/10W 820-J	103P402040	1/10W 82K-F	103P477010
1/10W 910-F	103P472040	1/10W 100K-J	103P404090
1/10W 1K-F	103P472050	1/10W 120K-J	103P405000
1/10W 1K-J	103P402050	1/10W 220K-J	103P405030
1/16W 1K-J	103P502050	1/10W 470K-J	103P405070
1/10W 1.2K-J	103P402060	1/10W 560K-J	103P405080
		1/10W 1M-J	103P406010

Conventional Resistors (By Ref #)

Ref	Part No.	Descriiption	[#]
R2J01	103P715000	R-CARBON - 1/4W 120K-J	
R2J02	103P715000	R-CARBON - 1/4W 120K-J	
R2J11	103P715000	R-CARBON - 1/4W 120K-J	
R2J13	103P715000	R-CARBON - 1/4W 120K-J	
R2J21	103P715000	R-CARBON - 1/4W 120K-J	
R2J23	103P715000	R-CARBON - 1/4W 120K-J	
R2J44	103P715000	R-CARBON - 1/4W 120K-J	
R2J45	103P715000	R-CARBON - 1/4W 120K-J	
R2K70	103P711030	R-CARBON - 1/4W 100-J	
R2K71	103P711080	R-CARBON - 1/4W 270-J	
R401	103P464030	R-METAL - 1/4W 5.6K-F	
R405	103P463040	R-METAL - 1/4W 2.4K-F	
R411	103P712040	R-CARBON - 1/4W 820-J	
R451	103P713030	R-CARBON - 1/4W 4.7K-J	
R453	103P711090	R-CARBON - 1/4W 330-J	
R458	103C188040	R-METAL - 2W 2.2-J	
R459	103C188050	R-METAL - 2W 2.7-J	
R462	103P712090	R-CARBON - 1/4W 2.2K-J	
R463	103P713050	R-CARBON - 1/4W 6.8K-J	

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
R464	103P713000	R-CARBON - 1/4W 2.7K-J	
R465	103P712050	R-CARBON - 1/4W 1K-J	
R466	103P712050	R-CARBON - 1/4W 1K-J	
R467	103P712050	R-CARBON - 1/4W 1K-J	
R502	103P713030	R-CARBON - 1/4W 4.7K-J	
R503	103P713070	R-CARBON - 1/4W 10K-J	
R507	103P711030	R-CARBON - 1/4W 100-J	
R508	103P712050	R-CARBON - 1/4W 1K-J	
R510	103P713030	R-CARBON - 1/4W 4.7K-J	
R512	103P711030	R-CARBON - 1/4W 100-J	
R520	103C187090	R-METAL - 2W 0.82-J	
R521	**103P713070**	**R-CARBON - 1/4W 10K-J**	
R522	103C187090	R-METAL - 2W 0.82-J	
R524	103P713090	R-CARBON - 1/4W 15K-J	
R528	103P711010	R-CARBON - 1/4W 68-J	
R529	**103P397090**	**R-FUSE - 1/2W 0.82-J**	
R531	103P712010	R-CARBON - 1/4W 470-J	
R532	103P712010	R-CARBON - 1/4W 470-J	
R533	103P712050	R-CARBON - 1/4W 1K-J	
R534	103C393060	R-METAL-P - 3W 8.2K-J	
R535	103C393060	R-METAL-P - 3W 8.2K-J	
R537	103P712050	R-CARBON - 1/4W 1K-J	
R538	103C182020	R-METAL - 2W 560-J	
R540	103P711030	R-CARBON - 1/4W 100-J	
R541	103P713010	R-CARBON - 1/4W 3.3K-J	
R544	103P467070	R-METAL - 1/4W 150K-F	
R545	103P467020	R-METAL - 1/4W 2.4K-F	
R546	103P714060	R-CARBON - 1/4W 56K-J	
R550	103P713070	R-CARBON - 1/4W 10K-J	
R552	103P715090	R-CARBON - 1/4W 680K-J	
R553	103P463040	R-METAL - 1/4W 2.4K-F	
R554	103P712050	R-CARBON - 1/4W 1K-J	
R555	103C390070	R-METAL-P - 3W 33-J	
R556	103P714030	R-CARBON - 1/4W 33K-J	
R557	103P712050	R-CARBON - 1/4W 1K-J	
R558	103C391050	R-METAL-P - 3W 150-J	
R559	103P463050	R-METAL - 1/4W 2.7K-F	
R561	103P464010	R-METAL - 1/4W 4.7K-F	
R563	103P714070	R-CARBON - 1/4W 68K-J	
R564	103P714040	R-CARBON - 1/4W 39K-J	
R565	103P714090	R-CARBON - 1/4W 100K-J	
R566	103C187080	R-METAL - 2W 0.68-J	
R567	103P712050	R-CARBON - 1/4W 1K-J	
R568	103P714010	R-CARBON - 1/4W 22K-J	
R569	**103P390010**	**R-FUSE - 1/2W 10-J**	
R570	103P715000	R-CARBON - 1/4W 120K-J	
R571	**103P715060**	**R-CARBON - 1/4W 390K-J**	
R572	103P712030	R-CARBON - 1/4W 680-J	
R573	103C390090	R-METAL-P - 3W 47-J	
R574	103P714090	R-CARBON - 1/4W 100K-J	
R576	103P715070	R-CARBON - 1/4W 470K-J	
R577	103P713060	R-CARBON - 1/4W 8.2K-J	
R579	**103P438040**	**R-FUSE-MET - 2W 2.2-K/J**	
R580	103P714050	R-CARBON - 1/4W 47K-J	
R581	103P713030	R-CARBON - 1/4W 4.7K-J	
R582	103P712050	R-CARBON - 1/4W 1K-J	
R583	103P713000	R-CARBON - 1/4W 2.7K-J	
R584	103P712090	R-CARBON - 1/4W 2.2K-J	
R587	**101P101030**	**R-COMPOSITION - 1/2W 100-K**	
R588	103C171040	R-METAL - 1W 120-J	
R590	103P713090	R-CARBON - 1/4W 15K-J	
R595	103P713070	R-CARBON - 1/4W 10K-J	
R596	**103P463080**	**R-METAL - 1/4W 2.4K-F**	
R597	**103P460090**	**R-METAL - 1/4W 220-F**	
R599	103P714020	R-CARBON - 1/4W 27K-J	
R5K03	103C174030	R-METAL - 1W 33K-J	
R5K04	103C174030	R-METAL - 1W 33K-J	
R5K05	103C174030	R-METAL - 1W 33K-J	
R5K06	103C174030	R-METAL - 1W 33K-J	
R5K07	103C174030	R-METAL - 1W 33K-J	
R5K08	103C174030	R-METAL - 1W 33K-J	
R5K09	**103P392020**	**R-FUSE - 1/2W 560-J**	
R5K10	103P712050	R-CARBON - 1/4W 1K-J	
R5K11	103P711070	R-CARBON - 1/4W 220-J	
R5K12	**103P390060**	**R-FUSE - 1/2W 27-J**	
R5K13	103P711090	R-CARBON - 1/4W 330-J	
R5K15	103P712070	R-CARBON - 1/4W 1.5K-J	
R5K16	103P711030	R-CARBON - 1/4W 100-J	
R5K25	103P711030	R-CARBON - 1/4W 100-J	
R5K32	103P715010	R-CARBON - 1/4W 150K-J	
R5K33	103P714050	R-CARBON - 1/4W 47K-J	
R5K34	**103P390060**	**R-FUSE - 1/2W 27-J**	
R5K43	103P712050	R-CARBON - 1/4W 1K-J	
R5K46	103P711030	R-CARBON - 1/4W 100-J	
R600	103P714010	R-CARBON - 1/4W 22K-J	
R601	103P714050	R-CARBON - 1/4W 47K-J	
R602	103P711030	R-CARBON - 1/4W 100-J	
R6B01	103P141080	R-CARBON - 1/2W 270-J	
R6B02	103P711020	R-CARBON - 1/4W 82-J	
R6B07	103P712050	R-CARBON - 1/4W 1K-J	
R6B09	103C193030	R-METAL - 3W 4.7K-J	
R6B10	103C193010	R-METAL - 3W 3.3K-J	
R6B11	103P711030	R-CARBON - 1/4W 100-J	
R6B12	103P711030	R-CARBON - 1/4W 100-J	
R6B13	103P711070	R-CARBON - 1/4W 220-J	
R6B16	103P711070	R-CARBON - 1/4W 220-J	
R6B17	103P711030	R-CARBON - 1/4W 100-J	
R6G01	103P141080	R-CARBON - 1/2W 270-J	
R6G02	103P711020	R-CARBON - 1/4W 82-J	
R6G07	103P712050	R-CARBON - 1/4W 1K-J	
R6G09	103C193030	R-METAL - 3W 4.7K-J	
R6G10	103C193010	R-METAL - 3W 3.3K-J	
R6G11	103P711030	R-CARBON - 1/4W 100-J	
R6G12	103P711030	R-CARBON - 1/4W 100-J	
R6G13	103P711070	R-CARBON - 1/4W 220-J	
R6G16	103P711070	R-CARBON - 1/4W 220-J	
R6G17	103P711030	R-CARBON - 1/4W 100-J	
R6R01	103P141080	R-CARBON - 1/2W 270-J	
R6R02	103P711020	R-CARBON - 1/4W 82-J	
R6R07	103P712050	R-CARBON - 1/4W 1K-J	
R6R09	103C193030	R-METAL - 3W 4.7K-J	
R6R10	103C193010	R-METAL - 3W 3.3K-J	
R6R11	103P711030	R-CARBON - 1/4W 100-J	
R6R12	103P711030	R-CARBON - 1/4W 100-J	
R6R13	103P711070	R-CARBON - 1/4W 220-J	
R6R16	103P711070	R-CARBON - 1/4W 220-J	
R6R17	103P711030	R-CARBON - 1/4W 100-J	
R77A0	103P712050	R-CARBON - 1/4W 1K-J	
R77A1	103P713010	R-CARBON - 1/4W 3.3K-J	
R7A97	103C180050	R-METAL - 2W 22-J	5&6

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
R7A98	103C180050	R-METAL - 2W 22-J	5&6
R7E00	103P711070	R-CARBON - 1/4W 220-J	
R7E01	103P712000	R-CARBON - 1/4W 390-J	
R7E02	103P712030	R-CARBON - 1/4W 680-J	
R7E03	103P712080	R-CARBON - 1/4W 1.8K-J	
R7E04	103P714010	R-CARBON - 1/4W 22K-J	
R7E05	103P711070	R-CARBON - 1/4W 220-J	
R7E06	103P712000	R-CARBON - 1/4W 390-J	
R7E07	103P712030	R-CARBON - 1/4W 680-J	
R7E08	103P712080	R-CARBON - 1/4W 1.8K-J	
R7E09	103P714010	R-CARBON - 1/4W 22K-J	
R7K21	103P711080	R-CARBON - 1/4W 270-J	5&6
R7K22	103P715030	R-CARBON - 1/4W 220K-J	5&6
R7K23	103P713080	R-CARBON - 1/4W 12K-J	5&6
R7K24	103P713080	R-CARBON - 1/4W 12K-J	5&6
R7K25	103P713080	R-CARBON - 1/4W 12K-J	5&6
R7K26	103P715030	R-CARBON - 1/4W 220K-J	5&6
R7K27	103P713070	R-CARBON - 1/4W 10K-J	5&6
R7K28	103P711050	R-CARBON - 1/4W 150-J	5&6
R7K29	103P712060	R-CARBON - 1/4W 1.2K-J	5&6
R7K30	103P713070	R-CARBON - 1/4W 10K-J	5&6
R7K31	103P715030	R-CARBON - 1/4W 220K-J	5&6
R7K32	103P713030	R-CARBON - 1/4W 4.7K-J	5&6
R7K34	103P713000	R-CARBON - 1/4W 2.7K-J	5&6
R7K35	103P711030	R-CARBON - 1/4W 100-J	5&6
R8C01	103C182020	R-METAL - 2W 560-J	
R8C02	103C182020	R-METAL - 2W 560-J	
R8C03	103C182020	R-METAL - 2W 560-J	
R8C04	103C182020	R-METAL - 2W 560-J	
R8C19	103C189000	R-METAL - 2W 6.8-J	
R8C20	103C189000	R-METAL - 2W 6.8-J	
R8C21	103C171090	R-METAL - 1W 330-J	
R8C22	103C189000	R-METAL - 2W 6.8-J	
R8C23	103C189000	R-METAL - 2W 6.8-J	
R8C24	103C171090	R-METAL - 1W 330-J	
R8C25	103C189000	R-METAL - 2W 6.8-J	
R8C26	103C189000	R-METAL - 2W 6.8-J	
R8C27	103C171090	R-METAL - 1W 330-J	
R8C28	103C189000	R-METAL - 2W 6.8-J	
R8C29	103C189000	R-METAL - 2W 6.8-J	
R8C30	103C171090	R-METAL - 1W 330-J	
R8C45	103C189000	R-METAL - 2W 6.8-J	
R8C46	103C189000	R-METAL - 2W 6.8-J	
R8C47	103C171090	R-METAL - 1W 330-J	
R8C48	103C189000	R-METAL - 2W 6.8-J	
R8C49	103C189000	R-METAL - 2W 6.8-J	
R8C50	103C171090	R-METAL - 1W 330-J	
R8C59	103C187060	R-METAL - 2W 0.47-J	
R8C60	103C187060	R-METAL - 2W 0.47-J	
R912	103C187030	R-METAL - 2W 0.27-J	
R913	103C187030	R-METAL - 2W 0.27-J	
R915	103P713020	R-CARBON - 1/4W 3.9K-J	
R916	103P711040	R-CARBON - 1/4W 120-J	
R917	103C187070	R-METAL - 2W 0.56-J	
R918	103P713070	R-CARBON - 1/4W 10K-J	
R920	103P713080	R-CARBON - 1/4W 12K-J	
R921	103P715090	R-CARBON - 1/4W 680K-J	
R943	103P713070	R-CARBON - 1/4W 10K-J	
R944	103C390030	R-METAL-P - 3W 15-J	
R945	103C187070	R-METAL - 2W 0.56-J	
R947	103C188000	R-METAL - 2W 1-J	
R948	103P711030	R-CARBON - 1/4W 100-J	
R949	103P715050	R-CARBON - 1/4W 330K-J	
R951	109D077080	R-CEMENT-WIRE - 15W 0.56-K	
R954	103P713010	R-CARBON - 1/4W 3.3K-J	
R955	102P107000	R-WIRE - 2W 0.15-K	
R956	102P107000	R-WIRE - 2W 0.15-K	
R958	103C170060	R-METAL - 1W 27-J	
R960	103P714010	R-CARBON - 1/4W 22K-J	
R961	103P712080	R-CARBON - 1/4W 1.8K-J	
R962	**109D036020**	**R-COMPOSITION - 1/2W 4.7M-K**	
R963	103P712030	R-CARBON - 1/4W 680-J	
R964	103C183070	R-METAL - 2W 10K-J	
R966	**109C010010**	**R-COMPOSITION - 1/2W 1M-K**	
R967	**109C010010**	**R-COMPOSITION - 1/2W 1M-K**	
R968	103P715070	R-CARBON - 1/4W 470K-J	
R969	103P714030	R-CARBON - 1/4W 33K-J	
R972	103P712020	R-CARBON - 1/4W 560-J	
R975	**103P713000**	**R-CARBON - 1/4W 2.7K-J**	
R976	**103P713020**	**R-CARBON - 1/4W 3.9K-J**	
R978	103P713000	R-CARBON - 1/4W 2.7K-J	
R979	103P713010	R-CARBON - 1/4W 3.3K-J	
R980	103P713080	R-CARBON - 1/4W 12K-J	
R984	103P464020	R-METAL - 1/4W 2.4K-F	
R986	103P464040	R-METAL - 1/4W 2.4K-F	
R993	103C394010	R-METAL-P - 3W 22K-J	
R994	103P713070	R-CARBON - 1/4W 10K-J	
R9A01	103C188040	R-METAL - 2W 2.2-J	

CAPACITORS & TRIMMERS

C1A06	141P142010	C-CER-CHIP - B50V 0.01M-K
C1A07	141P142010	C-CER-CHIP - B50V 0.01M-K
C1A08	141P142010	C-CER-CHIP - B50V 0.01M-K
C1A09	141P143080	C-CER-CHIP - F50V 0.01M-Z
C1A13	141P142010	C-CER-CHIP - B50V 0.01M-K
C1A29	181P352040	C-ELEC - 16V 100M-M
C1A30	181P352040	C-ELEC - 16V 100M-M
C1B06	141P142010	C-CER-CHIP - B50V 0.01M-K
C1B07	141P142010	C-CER-CHIP - B50V 0.01M-K
C1B09	141P143080	C-CER-CHIP - F50V 0.01M-Z
C1B13	141P142010	C-CER-CHIP - B50V 0.01M-K
C1B29	181P352040	C-ELEC - 16V 100M-M
C1R01	181P352040	C-ELEC - 16V 100M-M
C1R02	141P142010	C-CER-CHIP - B50V 0.01M-K
C2A01	141P134070	C-CER-CHIP - B16V 1M-K
C2A03	141P142010	C-CER-CHIP - B50V 0.01M-K
C2A04	172P262010	C-M-POLY - 50V 0.047M-J
C2A05	141P143030	C-CER-CHIP - B16V 0.1M-K
C2B01	141P134070	C-CER-CHIP - B16V 1M-K
C2B03	141P142010	C-CER-CHIP - B50V 0.01M-K
C2B04	172P262010	C-M-POLY - 50V 0.047M-J
C2C00	141P143030	C-CER-CHIP - B16V 0.1M-K
C2C02	154P354000	C-CER-CHIP - SL50V 150P-J
C2C03	154P354000	C-CER-CHIP - SL50V 150P-J
C2C04	141P143030	C-CER-CHIP - B16V 0.1M-K
C2C08	141P143030	C-CER-CHIP - B16V 0.1M-K
C2C10	141P143030	C-CER-CHIP - B16V 0.1M-K
C2C11	141P143030	C-CER-CHIP - B16V 0.1M-K
C2C30	154P341090	C-CER-CHIP - CH50V 22P-J
C2C31	154P341090	C-CER-CHIP - CH50V 22P-J

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
C2C32	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C45	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C46	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C50	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2C53	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C64	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C81	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C82	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C85	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C88	141P134070	C-CER-CHIP - B16V 1M-K	
C2C89	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C90	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C91	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C92	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C94	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C95	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2C96	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2D06	154P343030	C-CER-CHIP - CH50V 82P-J	
C2D07	154P343030	C-CER-CHIP - CH50V 82P-J	
C2D09	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2D10	154P343050	C-CER-CHIP - CH50V 100P-J	
C2D11	154P343050	C-CER-CHIP - CH50V 100P-J	
C2D12	154P354000	C-CER-CHIP - SL50V 150P-J	
C2D13	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2D14	154P355020	C-CER-CHIP - SL50V 470P-J	
C2D15	154P343030	C-CER-CHIP - CH50V 82P-J	
C2D16	154P343030	C-CER-CHIP - CH50V 82P-J	
C2D17	181P352030	C-ELEC - 16V 47M-M	
C2D18	154P342070	C-CER-CHIP - CH50V 47P-J	
C2D19	181P352030	C-ELEC - 16V 47M-M	
C2D20	154P333010	C-CER-CHIP - CH50V 68P-J	
C2D21	154P343030	C-CER-CHIP - CH50V 82P-J	
C2E00	141P134070	C-CER-CHIP - B16V 1M-K	
C2E01	141P140090	C-CER-CHIP - B50V 1000P-K	
C2E02	181P352030	C-ELEC - 16V 47M-M	
C2E03	141P142050	C-CER-CHIP - B25V 0.022M-K	
C2K02	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K04	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K09	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K11	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K12	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2K14	141P144050	C-CER-CHIP - F16V 0.47M-Z	
C2K16	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K18	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K19	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2K21	141P144050	C-CER-CHIP - F16V 0.47M-Z	
C2K23	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K25	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K26	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2K28	141P144050	C-CER-CHIP - F16V 0.47M-Z	
C2K29	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K31	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2K41	181P352070	C-ELEC - 16V 470M-M	
C2K42	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2K51	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2K70	181P352040	C-ELEC - 16V 100M-M	
C2K71	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2K72	181P352060	C-ELEC - 16V 330M-M	
C2P20	141P144050	C-CER-CHIP - F16V 0.47M-Z	
C2P21	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2P22	181P352040	C-ELEC - 16V 100M-M	
C2P30	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C2P40	181P352050	C-ELEC - 16V 220M-M	
C2V00	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V01	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V02	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V07	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V09	141P134070	C-CER-CHIP - B16V 1M-K	
C2V10	141P134070	C-CER-CHIP - B16V 1M-K	
C2V11	141P134070	C-CER-CHIP - B16V 1M-K	
C2V13	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V15	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2V16	141P134070	C-CER-CHIP - B16V 1M-K	
C2V18	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2V19	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2V20	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V22	141P140090	C-CER-CHIP - B50V 1000P-K	
C2V23	141P134070	C-CER-CHIP - B16V 1M-K	
C2V24	154P341070	C-CER-CHIP - CH50V 18P-J	
C2V25	154P355020	C-CER-CHIP - SL50V 470P-J	
C2V26	141P139090	C-CER-CHIP - B16V 0.47M-K	
C2V29	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2V30	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2V40	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V41	181P352030	C-ELEC - 16V 47M-M	
C2V42	181P352030	C-ELEC - 16V 47M-M	
C2V43	181P352030	C-ELEC - 16V 47M-M	
C2V44	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V50	181P352030	C-ELEC - 16V 47M-M	
C2V51	181P352030	C-ELEC - 16V 47M-M	
C2V52	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V53	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2V54	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2Y00	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2Y01	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2Y02	181P352030	C-ELEC - 16V 47M-M	
C2Y03	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2Y20	181P352030	C-ELEC - 16V 47M-M	
C2Y21	141P133010	C-CER-CHIP - B10V 3.3M-M	
C2Y22	141P133010	C-CER-CHIP - B10V 3.3M-M	
C2Y23	181P352010	C-ELEC - 16V 22M-M	
C2Y24	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2Y25	141P133010	C-CER-CHIP - B10V 3.3M-M	
C2Y26	141P133010	C-CER-CHIP - B10V 3.3M-M	
C2Y30	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2Y31	181P352030	C-ELEC - 16V 47M-M	
C2Y40	141P143030	C-CER-CHIP - B16V 0.1M-K	
C2Y60	141P141010	C-CER-CHIP - B50V 1500P-K	
C2Y61	141P141010	C-CER-CHIP - B50V 1500P-K	
C2Y70	141P142010	C-CER-CHIP - B50V 0.01M-K	
C2Y71	181P352030	C-ELEC - 16V 47M-M	
C2Y72	154P344010	C-CER-CHIP - CH50 180P-J	
C2Y73	154P354020	C-CER-CHIP - SL50V 180P-J	
C2Y74	154P352080	C-CER-CHIP - SL50V 47P-J	
C2Y80	141P142010	C-CER-CHIP - B50V 0.01M-K	
C309	172P262050	C-M-POLY - 50V 0.1M-J	
C311	172P262050	C-M-POLY - 50V 0.1M-J	
C312	172P262050	C-M-POLY - 50V 0.1M-J	
C314	172P262050	C-M-POLY - 50V 0.1M-J	
C321	154P329040	C-CER-CHIP - SL50V 6800P-J	

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
C322	154P329040	C-CER-CHIP - SL50V 6800P-J	
C3A01	154P329030	C-CER-CHIP - SL50V 5600P-J	
C3A02	141P142070	C-CER-CHIP - B25V 0.033M-K	
C3A07	141P139050	C-CER-CHIP - B25V 0.15M-K	
C3A08	141P134070	C-CER-CHIP - B16V 1M-K	
C3A09	141P142000	C-CER-CHIP - B50V 8200P-K	
C3A11	181P352040	C-ELEC - 16V 100M-M	
C3A12	141P134070	C-CER-CHIP - B16V 1M-K	
C3A13	141P134070	C-CER-CHIP - B16V 1M-K	
C3A15	181P124020	C-ELEC-NP - 50V 4.7M-M	
C3A18	141P134070	C-CER-CHIP - B16V 1M-K	
C3A19	141P134070	C-CER-CHIP - B16V 1M-K	
C3A21	141P142090	C-CER-CHIP - B25V 0.047M-K	
C3A23	141P143030	C-CER-CHIP - B16V 0.1M-K	
C3A27	181P352060	C-ELEC - 16V 330M-M	
C3A28	141P143030	C-CER-CHIP - B16V 0.1M-K	
C3A30	181P352040	C-ELEC - 16V 100M-M	
C3A31	141P139090	C-CER-CHIP - B16V 0.47M-K	
C3A33	141P139070	C-CER-CHIP - B16V 0.22M-K	
C3A38	181P124020	C-ELEC-NP - 50V 4.7M-M	
C3A40	141P134070	C-CER-CHIP - B16V 1M-K	
C3A41	141P134070	C-CER-CHIP - B16V 1M-K	
C3A42	141P142030	C-CER-CHIP - B50V 0.015M-K	
C3A43	141P142030	C-CER-CHIP - B50V 0.015M-K	
C3A44	141P142000	C-CER-CHIP - B50V 8200P-K	
C3A45	141P134070	C-CER-CHIP - B16V 1M-K	
C3A46	141P139050	C-CER-CHIP - B25V 0.15M-K	
C3A50	141P142070	C-CER-CHIP - B25V 0.033M-K	
C3A52	154P329030	C-CER-CHIP - SL50V 5600P-J	
C3C02	141P139090	C-CER-CHIP - B16V 0.47M-K	
C3C03	141P139090	C-CER-CHIP - B16V 0.47M-K	
C411	181P358010	C-ELEC - 35V 2200M-M	
C454	155P110090	C-CER - SL500V 8P-D	
C462	172P262010	C-M-POLY - 50V 0.047M-J	
C464	181P184010	C-ELEC - 50V 1000M-M 105C	
C520	142P011000	C-CER - B500V 560P-K	
C521	181P358000	C-ELEC - 35V 1000M-M	
C522	142P011000	C-CER - B500V 560P-K	
C526	142P011000	C-CER - B500V 560P-K	
C527	181P358000	C-ELEC - 35V 1000M-M	
C529	142P011000	C-CER - B500V 560P-K	
C531	181P188030	C-ELEC - 160V 2.2M-M 105C	
C544	172P262050	C-M-POLY - 50V 0.1M-J	
C547	172P081080	C-PLAST-PP - 200V 0.033M-J	
C549	172P262030	C-M-POLY - 50V 0.068M-J	
C551	181P188030	C-ELEC - 160V 2.2M-M 105C	
C552	**172P173010**	**C-M-PLA-PP - 1600V 9100P-J**	
C554	**189P071080**	**C-M-PLA-PP - 200V 0.47M-J**	
C555	142P011000	C-CER - B500V 560P-K	
C556	154P262050	C-CER - R2KV 560P-K	
C557	172P171020	C-M-PLA-PP - 1600V 8200P-J	
C560	189P071050	C-M-PLA-PP - 200V 0.33M-J	
C562	181P352040	C-ELEC - 16V 100M-M	
C565	142P011030	C-CER - B500V 1000P-K	
C566	181P195070	C-ELEC - 350V 33M-M	
C568	**154P262050**	**C-CER - R2KV 560P-K**	
C569	181P195050	C-ELEC - 350V 1M-M	
C572	142P011030	C-CER - B500V 1000P-K	
C573	154P262000	C-CER - R2KV 220P-K	
C584	181P352040	C-ELEC - 16V 100M-M	

Ref #	Part #	Part Name & Description	[#]
C592	172P262050	C-M-POLY - 50V 0.1M-J	
C595	172P262050	C-M-POLY - 50V 0.1M-J	
C596	172P417050	C-M-PLA-PP - 200V 1.2M-J	
C5A2	141P140010	C-CER-CHIP - B50V 220P-K	
C5A5	154P328080	C-CER-CHIP - SL50V 2200P-J	
C5A6	141P142010	C-CER-CHIP - B50V 0.01M-K	
C5A7	154P341010	C-CER-CHIP - CH50V 10P-C	
C5A8	181P352040	C-ELEC - 16V 100M-M	
C5K00	172P171060	C-M-PLA-PP - 1600V 0.018M-J	
C5K01	172P171060	C-M-PLA-PP - 1600V 0.018M-J	
C601	181P195010	C-ELEC - 350V 1M-M	
C6B00	154P355000	C-CER-CHIP - SL50V 390P-J	
C6B30	154P264000	C-CER - R3.15KV 150P-K	
C6G00	154P354080	C-CER-CHIP - SL50V 330-J	
C6G30	154P264000	C-CER - R3.15KV 150P-K	
C6P00	181P352030	C-ELEC - 16V 47M-M	
C6P01	154P342010	C-CER-CHIP - CH50V 27P-J	
C6P02	154P342010	C-CER-CHIP - CH50V 27P-J	
C6P03	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6P04	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6P06	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6P07	141P139090	C-CER-CHIP - B16V 0.47M-K	
C6P08	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6P09	181P350040	C-ELEC - 6.3V 330M-M	
C6P10	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6P12	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6P14	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6P15	141P143030	C-CER-CHIP - B16V 0.1M-K	
C6P16	141P143030	C-CER-CHIP - B16V 0.1M-K	
C6P17	141P143030	C-CER-CHIP - B16V 0.1M-K	
C6P20	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6P30	154P355020	C-CER-CHIP - SL50V 470P-J	
C6R00	154P354080	C-CER-CHIP - SL50V 330-J	
C6R30	154P264000	C-CER - R3.15KV 150P-K	
C6Y11	141P134070	C-CER-CHIP - B16V 1M-K	
C6Y12	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6Y13	172P262010	C-M-POLY - 50V 0.047M-J	
C6Y16	154P353060	C-CER-CHIP - SL50V 100P-J	
C6Y50	181P352040	C-ELEC - 16V 100M-M	
C6Y51	154P352040	C-CER-CHIP - SL50V 33P-J	
C6Y52	154P353080	C-CER-CHIP - SL50V 120P-J	
C6Y53	154P351020	C-CER-CHIP - SL50V 10P-J	
C6Y54	154P352060	C-CER-CHIP - SL50V 39P-J	
C6Y55	181P352020	C-ELEC - 16V 33M-M	
C6Y56	181P352070	C-ELEC - 16V 470M-M	
C6Y57	141P142010	C-CER-CHIP - B50V 0.01M-K	
C6Y58	141P133010	C-CER-CHIP - B10V 3.3M-M	
C6Y59	181P352030	C-ELEC - 16V 47M-M	
C6Y61	141P142010	C-CER-CHIP - B50V 0.01M-K	
C700	**141P140060**	**C-CER-CHIP - B50V 560P-K**	
C701	141P140090	C-CER-CHIP - B50V 1000P-K	
C702	141P140010	C-CER-CHIP - B50V 220P-K	
C703	141P134070	C-CER-CHIP - B16V 1M-K	
C712	141P142010	C-CER-CHIP - B50V 0.01M-K	
C713	154P341090	C-CER-CHIP - CH50V 22P-J	
C715	154P341090	C-CER-CHIP - CH50V 22P-J	
C716	141P143030	C-CER-CHIP - B16V 0.1M-K	
C717	154P341090	C-CER-CHIP - CH50V 22P-J	
C718	154P341090	C-CER-CHIP - CH50V 22P-J	
C719	141P142010	C-CER-CHIP - B50V 0.01M-K	

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
C720	141P142010	C-CER-CHIP - B50V 0.01M-K	
C721	141P143030	C-CER-CHIP - B16V 0.1M-K	
C722	141P143030	C-CER-CHIP - B16V 0.1M-K	
C762	141P143030	C-CER-CHIP - B16V 0.1M-K	
C77A0	181P352030	C-ELEC - 16V 47M-M	
C795	154P355020	C-CER-CHIP - SL50V 470P-J	
C799	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7A00	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7A01	141P142010	C-CER-CHIP - B50V 0.01M-K	
C7A03	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7A12	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7A16	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7A17	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7A62	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7A63	181P352030	C-ELEC - 16V 47M-M	
C7A64	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7A90	181P352050	C-ELEC - 16V 220M-M	5&6
C7A98	181P352030	C-ELEC - 16V 47M-M	
C7A99	141P143030	C-CER-CHIP - B16V 0.1M-K	
C7K23	181P352030	C-ELEC - 16V 47M-M	5&6
C7K25	172P262050	C-M-POLY - 50V 0.1M-J	5&6
C7K26	172P262050	C-M-POLY - 50V 0.1M-J	5&6
C842	154P342090	C-CER-CHIP - CH50V 56P-J	
C844	154P342090	C-CER-CHIP - CH50V 56P-J	
C845	154P342090	C-CER-CHIP - CH50V 56P-J	
C847	154P342090	C-CER-CHIP - CH50V 56P-J	
C848	154P342090	C-CER-CHIP - CH50V 56P-J	
C849	154P342090	C-CER-CHIP - CH50V 56P-J	
C852	154P343070	C-CER-CHIP - CH50V 120-J	
C8C03	181P186010	C-ELEC - 50V 220M-M 105C	
C8C04	181P186010	C-ELEC - 50V 220M-M 105C	
C8C05	181P352040	C-ELEC - 16V 100M-M	
C8C06	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8C07	181P352040	C-ELEC - 16V 100M-M	
C8C08	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8C12	181P186000	C-ELEC - 50V 100M-M 105C	
C8C13	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8C14	181P186000	C-ELEC - 50V 100M-M 105C	
C8C15	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8C16	154P353060	C-CER-CHIP - SL50V 100P-J	
C8C17	154P354000	C-CER-CHIP - SL50V 150P-J	
C8C18	154P353060	C-CER-CHIP - SL50V 100P-J	
C8C19	154P354000	C-CER-CHIP - SL50V 150P-J	
C8C20	154P353060	C-CER-CHIP - SL50V 100P-J	
C8C21	154P354000	C-CER-CHIP - SL50V 150P-J	
C8C29	141P140090	C-CER-CHIP - B50V 1000P-K	
C8C30	154P353060	C-CER-CHIP - SL50V 100P-J	
C8C31	154P354000	C-CER-CHIP - SL50V 150P-J	
C8C32	154P353060	C-CER-CHIP - SL50V 100P-J	
C8C33	141P140090	C-CER-CHIP - B50V 1000P-K	
C8C34	154P353060	C-CER-CHIP - SL50V 100P-J	
C8C35	141P140090	C-CER-CHIP - B50V 1000P-K	
C8C36	154P354000	C-CER-CHIP - SL50V 150P-J	
C8C37	154P354000	C-CER-CHIP - SL50V 150P-J	
C8D01	154P344070	C-CER-CHIP - CH50V 330P-J	
C8D02	154P343070	C-CER-CHIP - CH50V 120-J	
C8D03	154P344070	C-CER-CHIP - CH50V 330P-J	
C8D04	154P343070	C-CER-CHIP - CH50V 120-J	
C8D05	154P344070	C-CER-CHIP - CH50V 330P-J	
C8D06	154P343070	C-CER-CHIP - CH50V 120-J	
C8D07	154P344070	C-CER-CHIP - CH50V 330P-J	
C8D08	154P343070	C-CER-CHIP - CH50V 120-J	
C8D09	154P344070	C-CER-CHIP - CH50V 330P-J	
C8D11	154P344070	C-CER-CHIP - CH50V 330P-J	
C8D12	154P343070	C-CER-CHIP - CH50V 120-J	
C8D13	154P345030	C-CER-CHIP - CH25V 560P-J	
C8D15	154P344050	C-CER-CHIP - CH50V 270P-J	
C8D16	181P352030	C-ELEC - 16V 47M-M	
C8D17	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D18	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D19	181P352030	C-ELEC - 16V 47M-M	
C8D20	181P352030	C-ELEC - 16V 47M-M	
C8D21	181P352030	C-ELEC - 16V 47M-M	
C8D22	181P352030	C-ELEC - 16V 47M-M	
C8D23	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D24	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D25	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D26	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D27	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D28	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D30	181P352030	C-ELEC - 16V 47M-M	
C8D31	181P352030	C-ELEC - 16V 47M-M	
C8D32	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D33	181P352030	C-ELEC - 16V 47M-M	
C8D34	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D35	172P262040	C-M-POLY - 50V 0.082M-J	
C8D36	181P352030	C-ELEC - 16V 47M-M	
C8D37	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D38	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D39	181P352030	C-ELEC - 16V 47M-M	
C8D40	181P352030	C-ELEC - 16V 47M-M	
C8D41	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D42	181P352040	C-ELEC - 16V 100M-M	
C8D43	181P352030	C-ELEC - 16V 47M-M	
C8D44	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D45	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8D46	154P354000	C-CER-CHIP - SL50V 150P-J	
C8D47	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E01	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E02	181P352030	C-ELEC - 16V 47M-M	
C8E03	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E04	181P352030	C-ELEC - 16V 47M-M	
C8E05	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E06	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E09	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E10	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E13	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E14	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C8E29	141P143080	C-CER-CHIP - F50V 0.01M-Z	
C901	**189P153040**	**C-M-POLY - 250VAC 0.1M-M**	
C902	**189P153040**	**C-M-POLY - 250VAC 0.1M-M**	
C903	**189P185070**	**C-CER - 250VAC 1000P-M**	
C904	**189P185070**	**C-CER - 250VAC 1000P-M**	
C910	**189P152070**	**C-M-POLY - 250VAC 0.01M-M**	
C911	**189P152070**	**C-M-POLY - 250VAC 0.01M-M**	
C922	142P020010	C-CER - B50V 220P-K	
C923	181P182030	C-ELEC - 16V 1000M-M 105C	
C924	172P083010	C-PLAST-PP - 400V 0.015M-K	
C936	181P352040	C-ELEC - 16V 100M-M	
C939	181P352040	C-ELEC - 16V 100M-M	

[#] Model Legend: (1) VS-45609, (2) VS-50609, (3) VS-55609, (4) VS-60609, (5) VS-60719. (6) VS-70709

Ref #	Part #	Part Name & Description	[#]
C948	142P020010	C-CER - B50V 220P-K	
C951	**189P185090**	**C-CER - 250VAC 2200P-M**	
C952	**189P185090**	**C-CER - 250VAC 2200P-M**	
C954	**189P185090**	**C-CER - 250VAC 2200P-M**	
C955	**189P185090**	**C-CER - 250VAC 2200P-M**	
C957	185D102060	C-ELEC - H200V 1500M-M	
C958	154P260070	C-CER - R1KV 2200P-K	
C967	142P011000	C-CER - B500V 560P-K	
C969	185D121020	C-ELEC - H180V 470M-M 105C	
C970	185D120010	C-ELEC - H160V 330M-M 105C	
C972	181P352040	C-ELEC - 16V 100M-M	
C973	181P182070	C-ELEC - 16V 6800M-M 105C	
C977	185D163020	C-ELEC - H50V 4700M-M 105C	
C978	142P011000	C-CER - B500V 560P-K	
C993	154P260050	C-CER - R1KV 1000P-K	
C9A01	181P352040	C-ELEC - 16V 100M-M	
C9A02	141P143030	C-CER-CHIP - B16V 0.1M-K	

SWITCHES

S7A00	432P089010	SW-KEY-BOARD - PUSH-ON	
S7A01	432P089010	SW-KEY-BOARD - PUSH-ON	
S7A02	432P089010	SW-KEY-BOARD - PUSH-ON	
S7A03	432P089010	SW-KEY-BOARD - PUSH-ON	
S7A04	432P089010	SW-KEY-BOARD - PUSH-ON	
S7A05	432P089010	SW-KEY-BOARD - PUSH-ON	
S7A06	432P089010	SW-KEY-BOARD - PUSH-ON	
S7A07	432P089010	SW-KEY-BOARD - PUSH-ON	
S7A08	432P089010	SW-KEY-BOARD - PUSH-ON	

MISCELLANEOUS

	330P284010	**DEFL-YOKE**	
	411D024010	CORE-FERRITE	
	411D033010	CORE-FERRITE	
	449C141030	**SOCKET-CRT**	
	453B035010	**CAP-ANODE - SHORT - RED**	
	453B035020	**CAP-ANODE - LONG - G&B**	
	453C021030	**LEAD-ANODE - FBT-HV**	
	480P039010	SPEAKER	1-4
	480P053010	SPEAKER	5&6
	589C062010	CASTER	
	642C340010	BOARD-MIRROR	6
	642C352010	CLIP-MIRROR	1-5
	669D514070	SCREW-MIRROR BOARD	
	767D048050	MIRROR - 60"	4&5
	767D048080	MIRROR - 70"	6
	767D055010	MIRROR - 45"	1
	767D055020	MIRROR - 50"	2
	767D055030	MIRROR - 55"	3
	920P016010	**HV-BLOCK - MSC102**	
	490P154010	LENS:RED/BLUE	1&2
	490P154020	LENS:GREEN	1&2
	490P174010	LENS:RED	3-6
	490P174020	LENS:GREEN	3-6
	490P174030	LENS:BLUE	3-6
AG5K00	224D019040	AIR-GAP - 2.0+-0.5KV S.LEAD	
DL6Y50	337P134010	DELAY-LINE	
DL6Y90	409P900010	LP-FILTER - 7MHZ SMD	
F901	**283D060020**	**FUSE-UL - S5A**	
F902	**283D035070**	**FUSE - S2A**	
F903	**283D038070**	**FUSE-UL - S4A**	
F904	**283D060030**	**FUSE-UL - S6.3A**	
K903	**287P103010**	**RELAY-POWER - DG12D2-0(M)**	
PC951	**268P102010**	**PHOTO-COUPLER - TLP421 - (GR)**	
PC952	**268P102010**	**PHOTO-COUPLER - TLP421 - (GR)**	
PJ2J11	440C329040	PIN-JACK-BOARD-6P-S	
PJ2J21	440C329030	PIN-JACK-BOARD-6P-S	
PJ2J31	440C350010	PIN-JACK-BOARD-5P-S	
PJ701	451C129010	JACK-MINI - AV NET/IR BLAST	5&6
PJ702	451C129010	JACK-MINI - AV NET/IR BLAST	5&6
PJ79B0	440C231010	JACK-3PIN - FRONT A/V INPUT	
TU1A01	**295P500010**	**TUNER-RF - ENG26515G**	
TU1B01	**295P483030**	**TUNER-RF - ENG26526G**	
X2031	285P374050	QUARTS-CRYST - 20.000MHZ	
X2V00	285P287010	QUARTZ-CRYST - 3.579545MHZ	
X3A01	299P208010	CERAMIC-OSC - C5B503F58	
X6P00	285P402010	QUARTZ-CRYST - 20.250MHZ	
X713	285P374040	QUARTZ-CRYST - 10.000MHZ	
Z7K01	939P617010	UNIT-PREAMP - GP1U283Q	

PRINTED CIRCUIT BOARDS

930B874001	ASSY-PWB-MAIN	
930B875001	ASSY-PWB-SIGNAL	1-4
930B875002	ASSY-PWB-SIGNAL	5&6
935C938001	ASSY-PWB-FOR CRT	
935C951001	ASSY-PWB-TERMINAL	
935D554001	ASSY-PWB-PREAMP	1-4
935D554002	ASSY-PWB-PREAMP	5&6
935D555001	ASSY-PWB-DBF	
935D556001	ASSY-PWB-CONTROL-1	
935D557001	ASSY-PWB-FRONT-1	
935D614001	ASSY-PWB-APERTURE	

COSMETIC PARTS

242D483020	IR-MOUSE	5&6
246C351030	AC-POWER-CORD	
305P702020	RF-SW - YAA41-0126G	
622C074010	BOARD TOP - 50"	
642C330010	BOARD-REAR - 70"	6
702A385050	PANEL-CONTROL	1
702A385060	PANEL-CONTROL	2
702A391080	PANEL-CONTROL	3
702A391090	PANEL-CONTROL	4&5
702A393030	PANEL-CONTROL	6
703B031020	DOOR - FRONT A/V IN COVER	
761A157030	GRILLE-SP - 45"	1
761A157070	GRILLE-SP - 55"	3
761A158020	GRILLE-SP - 50"	2
761A159020	GRILLE-SP - 60"	4
761A159030	GRILLE-SP - 60"	5
761A171020	GRILLE-SP - 70"	6
853B291010	REGISTRATION-CARD	

ACCESSORIES

290P103030	REMOTE CONTROL - VZ9	1-4
290P103040	REMOTE CONTROL - VZ9+	5&6
871B195020	IB - OWNERS GUIDE	6
871D307010	IB - OWNERS GUIDE	
871D328010	QR-GUIDE	

[#] Model Legend: (1) VS-50805, (2) VS-60805, (3) WS-55805, (4) WS-55905, (5) WS-65905. (6) WS-73905, (7) WT-46805

SCREEN PARTS

VS-45609

Ref #	Part #	Part Name & Description
(1)	491P075010	SCREEN-LENTICULAR
(2)	491P076010	LENS-FRESNEL
(4)	622C059010	HOLDER-SCREEN-BOT
(3)	622C060010	HOLDER SCREEN-DS
(11)	622D757050	CUSHION-CORNERS
(12)	622D757060	CUSHION-CORNERS
(5)	701B394030	FRAME-SCREEN-SIDE - 45"
(6)	701B400050	FRAME-SCREEN-TOP - 45"
(8)	702A388030	CAP-CORNER-LEFT
(7)	702A388040	CAP-CORNER-RIGHT
(9)	760D628040	DIAMOND SHIELD

VS-50609

Ref #	Part #	Part Name & Description
(1)	491P099010	SCREEN-LENTICULAR
(2)	491P100010	LENS-FRESNEL
(3)	622C060020	CLIP-SCREEN-TOP/BOT
(11)	622D757050	CUSHION-CORNERS
(12)	622D757060	CUSHION-CORNERS
(4)	622C063020	HOLDER-SCREEN-BOT
(5)	701B394060	FRAME-SCREEN-SIDE - 50"
(6)	701B400060	FRAME-SCREEN-TOP - 50"
(8)	702A388030	CAP-CORNER-LEFT
(7)	702A388040	CAP-CORNER-RIGHT
(9)	760D627010	DIAMOND SHIELD

VS-55609

Ref #	Part #	Part Name & Description
(1)	491P101010	SCREEN-LENTICULAR
(2)	491P102010	LENS-FRESNEL
(3)	622C060030	CLIP-SCREEN-TOP/BOT
(11)	622D757050	CUSHION-CORNERS
(12)	622D757060	CUSHION-CORNERS
(4)	622C063030	HOLDER-SCREEN-BOT
(5)	701B394070	FRAME-SCREEN-SIDE - 55"
(6)	701B400070	FRAME-SCREEN-TOP - 55"
(8)	702A388030	CAP-CORNER-LEFT
(7)	702A388040	CAP-CORNER-RIGHT
(9)	760D627020	DIAMOND SHIELD

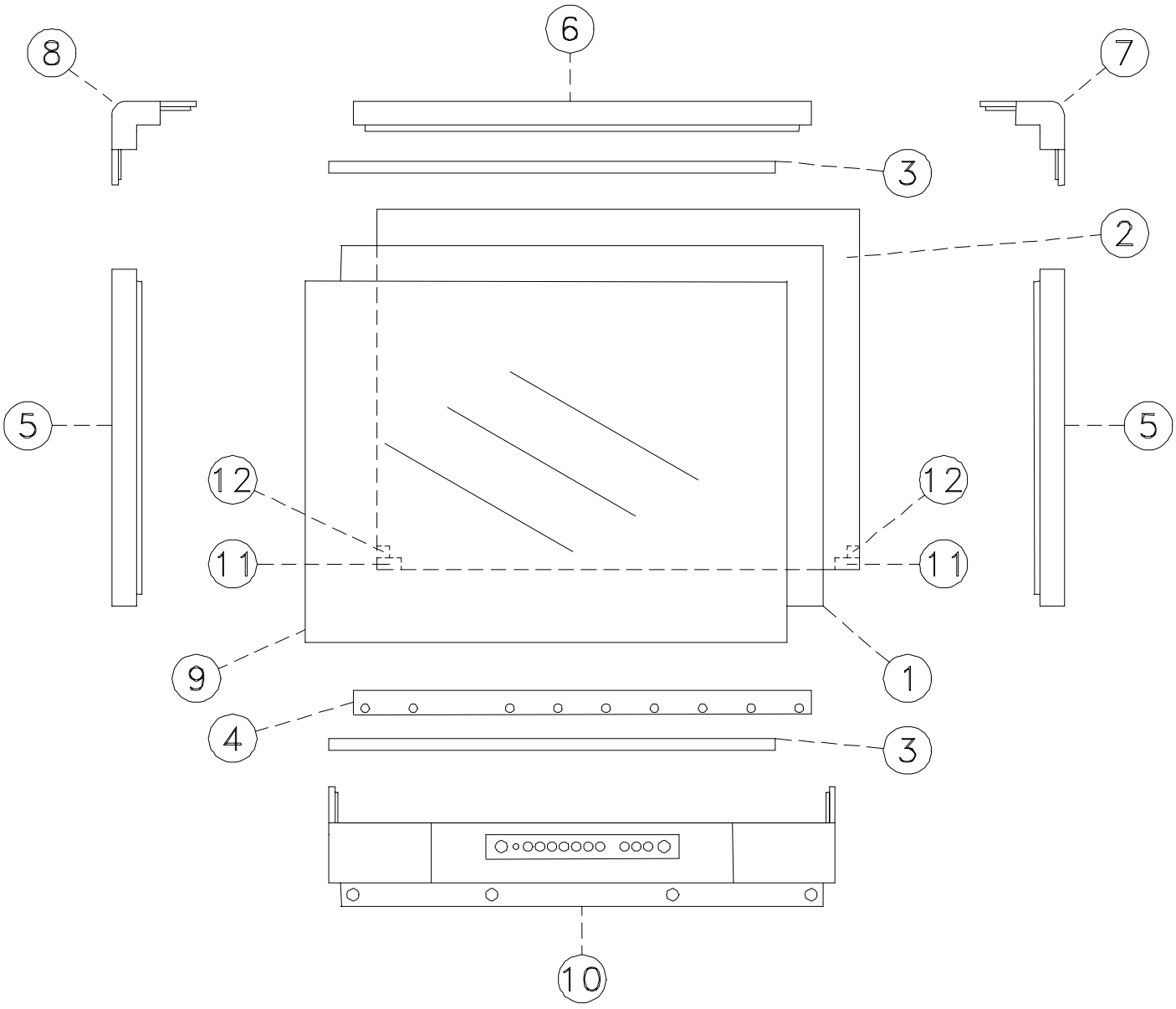
VS-60609 & VS-60719

Ref #	Part #	Part Name & Description
(1)	491P109010	SCREEN-LENTICULAR
(2)	491P110010	LENS-FRESNEL
(3)	622C060040	CLIP-SCREEN-TOP/BOT
(11)	622D757050	CUSHION-CORNERS
(12)	622D757060	CUSHION-CORNERS
(4)	622C063040	HOLDER-SCREEN-BOT
(5)	701B394080	FRAME-SCREEN-SIDE - 60"
(6)	701B400080	FRAME-SCREEN-TOP - 60"
(8)	702A388030	CAP-CORNER-LEFT
(7)	702A388040	CAP-CORNER-RIGHT
(9)	760D627030	DIAMOND SHIELD

VS-70709

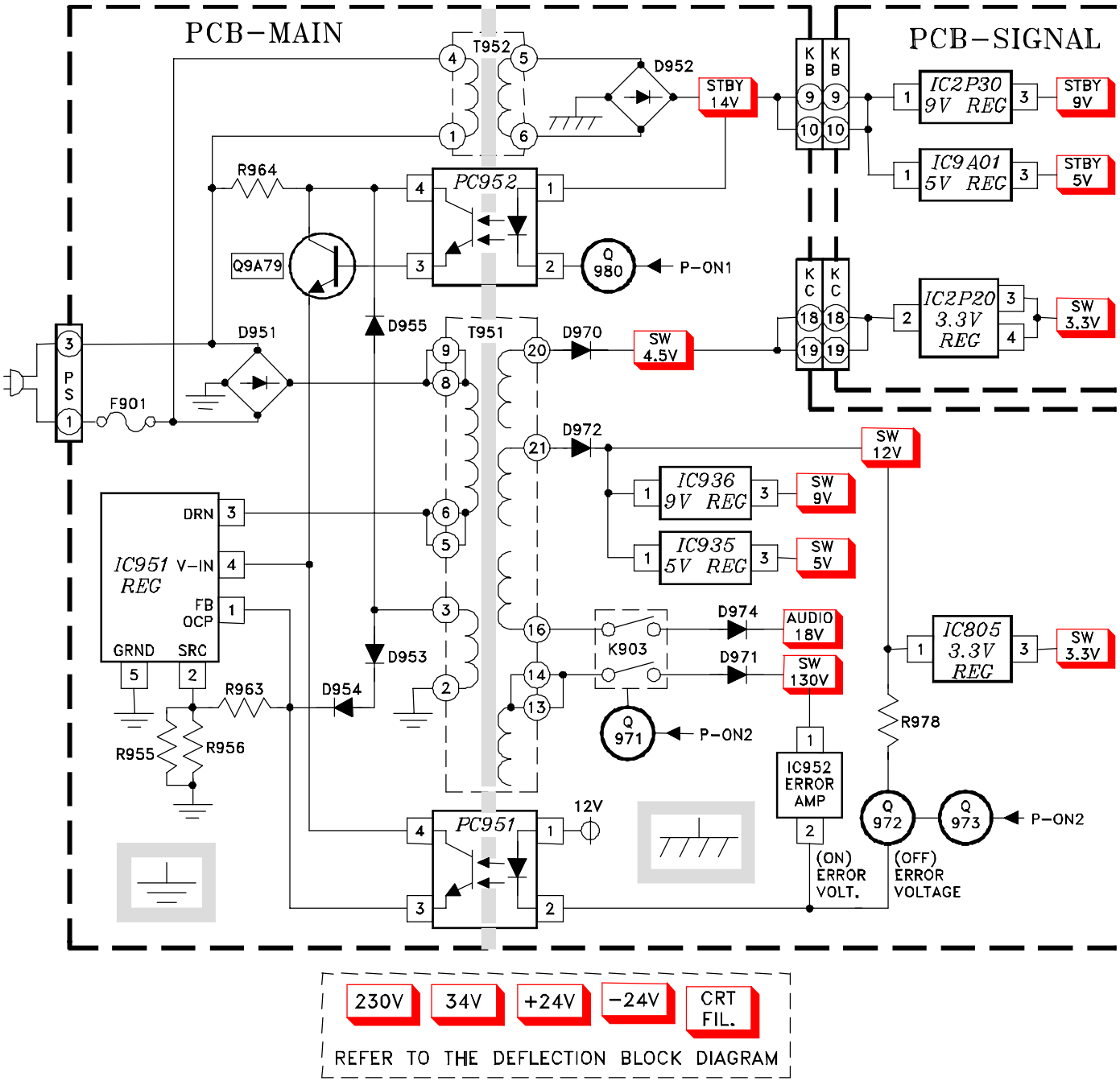
Ref #	Part #	Part Name & Description
(1)	491P107020	SCREEN-LENTICULAR
(2)	491P108020	LENS-FRESNEL
(3)	622C059050	HOLDER-SCREEN-BOT
(11)	622C060050	CLIP-SCREEN-TOP/BOT
(12)	622D757050	CUSHION-CORNERS
(4)	622D757060	CUSHION-CORNERS
(5)	701B425010	FRAME-SCREEN-TOP - 70"
(6)	701B426010	FRAME-SCREEN-SIDE - 70"
(8)	702A388030	CAP-CORNER-LEFT
(7)	702A388040	CAP-CORNER-RIGHT
(9)	760D627040	DIAMOND SHIELD
	802B772020	PAD-D.S. SCREEN - 70"

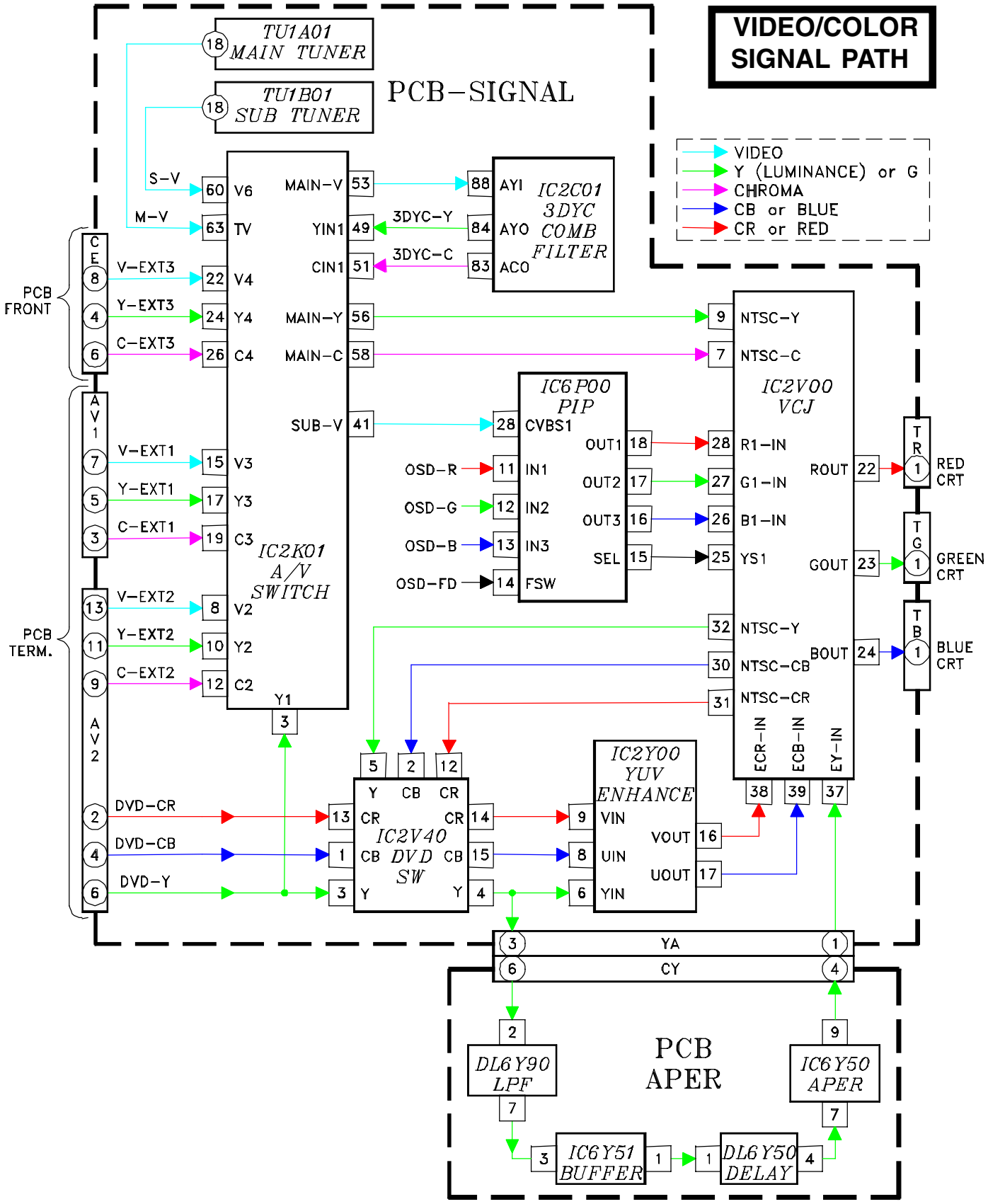
SCREEN ASSEMBLY

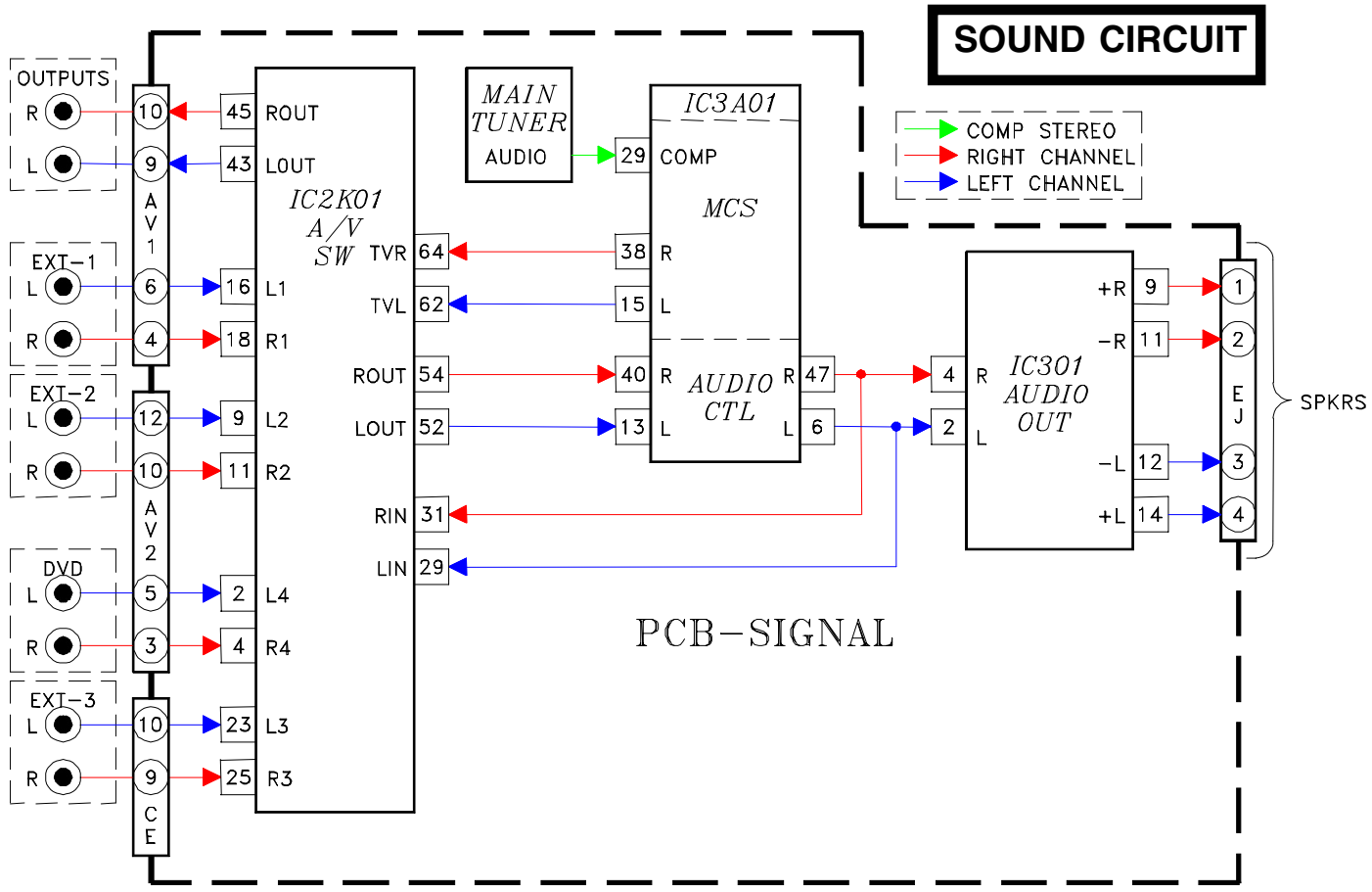


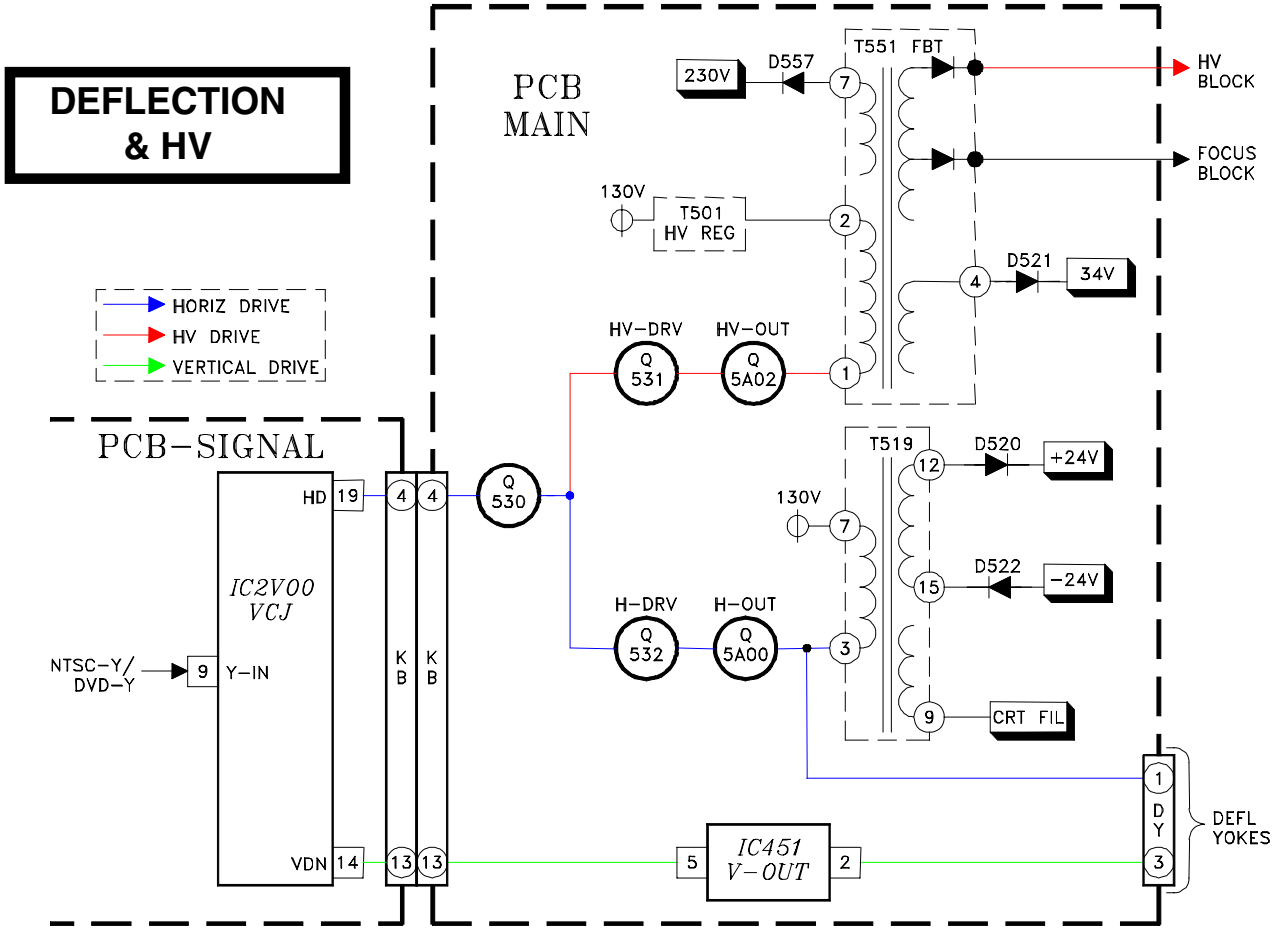
CIRCUITRY BLOCK DIAGRAMS

POWER SUPPLY

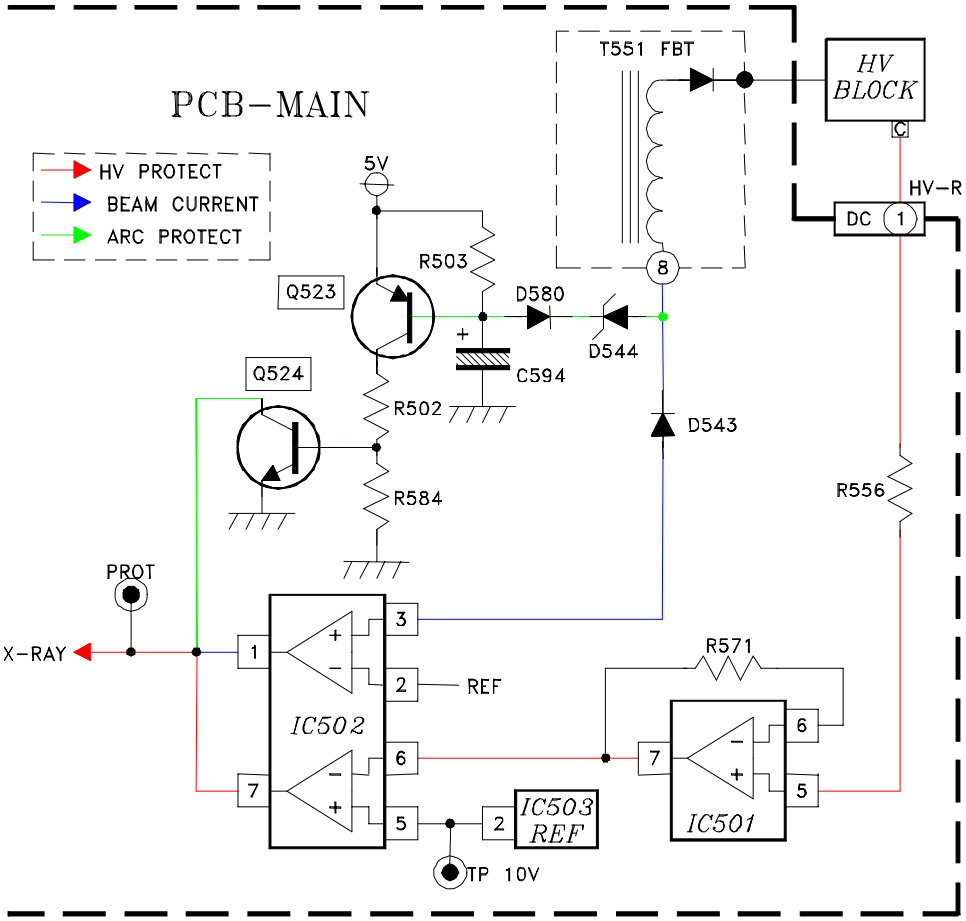



VIDEO/COLOR SIGNAL PATH
PCB-SIGNAL
VIDEO
Y (LUMINANCE) or G
CHROMA
CB or BLUE
CR or RED
TU1A01 MAIN TUNER
TU1B01 SUB TUNER
IC2C01 3DYC COMB FILTER
IC2K01 A/V SWITCH
IC6P00 PIP
IC2V00 VCJ
IC2V40 DVD SW
IC2Y00 YUV ENHANCE
PCB FRONT
PCB TERM.
PCB APER
DL6Y90 LPF
IC6Y50 APER
IC6Y51 BUFFER
DL6Y50 DELAY
RED CRT
GREEN CRT
BLUE CRT
S-V
M-V
V-EXT3
Y-EXT3
C-EXT3
V-EXT1
Y-EXT1
C-EXT1
V-EXT2
Y-EXT2
C-EXT2
DVD-CR
DVD-CB
DVD-Y
MAIN-V
YIN1
CIN1
MAIN-Y
MAIN-C
SUB-V
3DYC-Y
3DYC-C
OSD-R
OSD-G
OSD-B
OSD-FD
NTSC-Y
NTSC-C
NTSC-CB
NTSC-CR
YA
CY

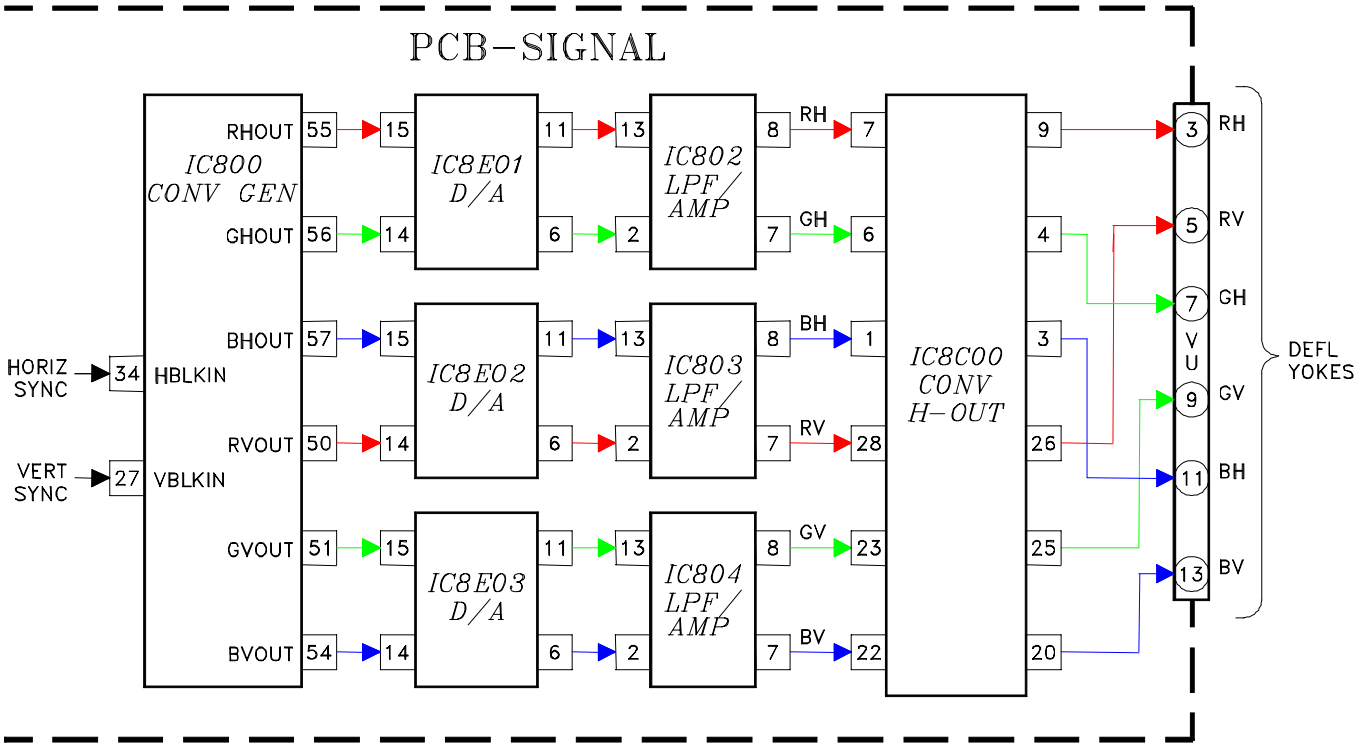

SOUND CIRCUIT
OUTPUTS
R
L
EXT-1
EXT-2
DVD
EXT-3
AV1
AV2
CE
IC2K01
A/V
SW
ROUT
LOUT
TVR
TVL
L1
R1
L2
R2
L4
R4
L3
R3
MAIN
TUNER
AUDIO
IC3A01
COMP
MCS
AUDIO
CTL
COMP STEREO
RIGHT CHANNEL
LEFT CHANNEL
IC301
AUDIO
OUT
+R
-R
-L
+L
EJ
SPKRS
PCB-SIGNAL


DEFLECTION
& HV
PCB
MAIN
230V
D557
T551 FBT
HV
BLOCK
FOCUS
BLOCK
130V
T501
HV REG
D521
34V
HORIZ DRIVE
HV DRIVE
VERTICAL DRIVE
HV-DRV
HV-OUT
Q
531
Q
5A02
PCB-SIGNAL
T519
D520
+24V
130V
D522
-24V
H-DRV
H-OUT
Q
532
Q
5A00
Q
530
IC2V00
VCJ
HD
VDN
NTSC-Y/
DVD-Y
Y-IN
KB
KB
CRT FIL
IC451
V-OUT
DY
DEFL
YOKES

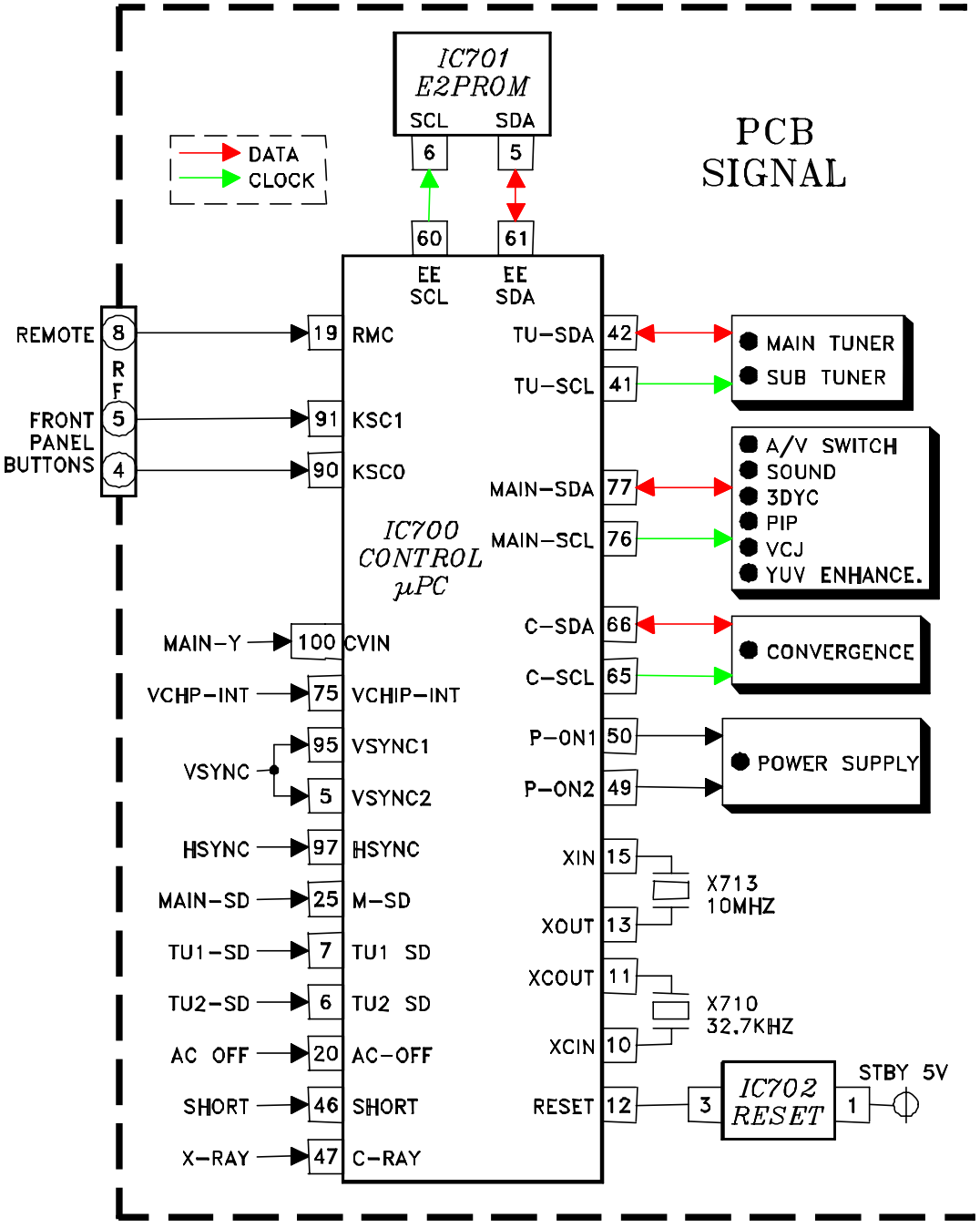
PROTECT CIRCUIT

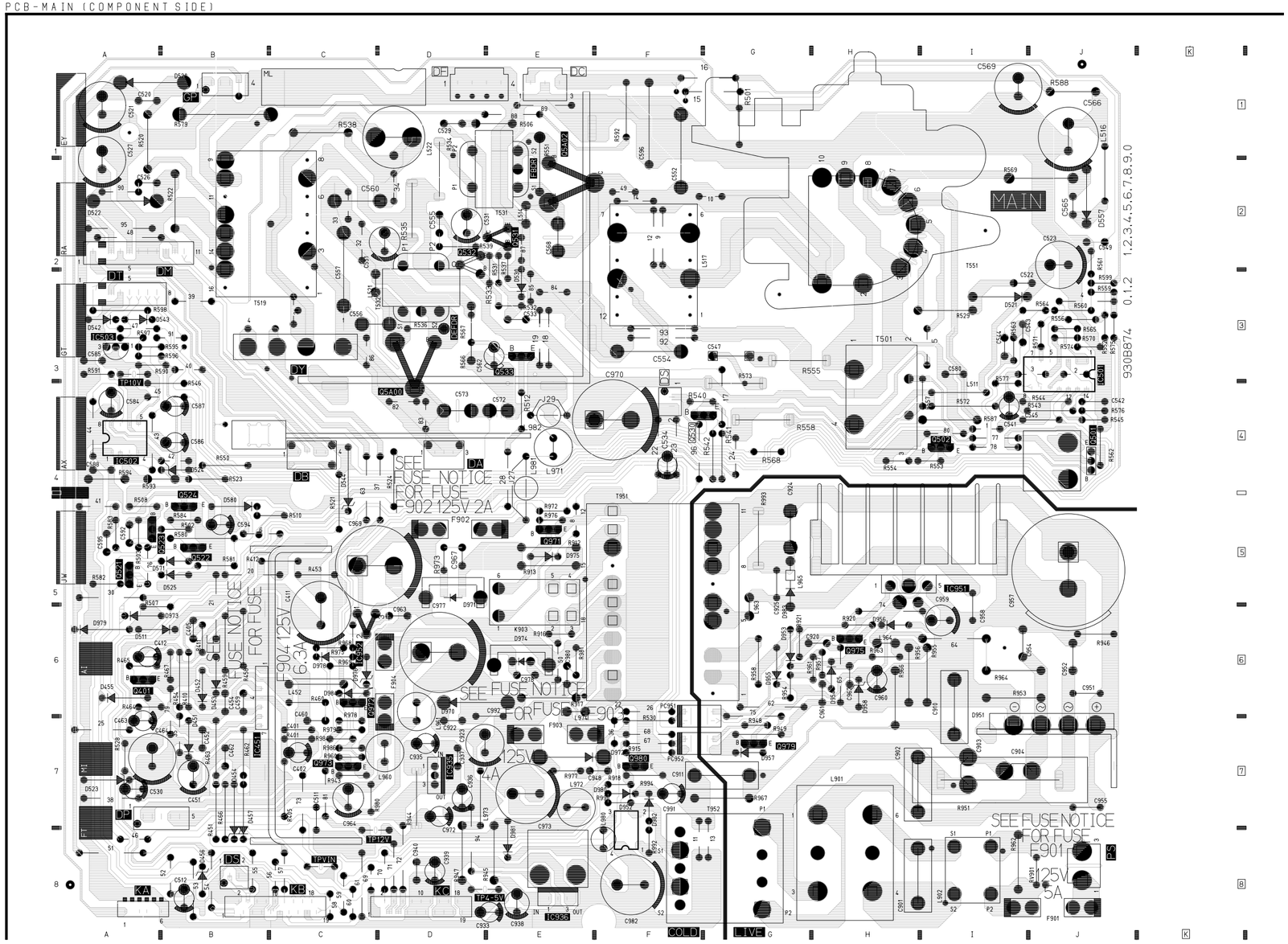


CONVERGENCE CIRCUITRY



CONTROL CIRCUIT

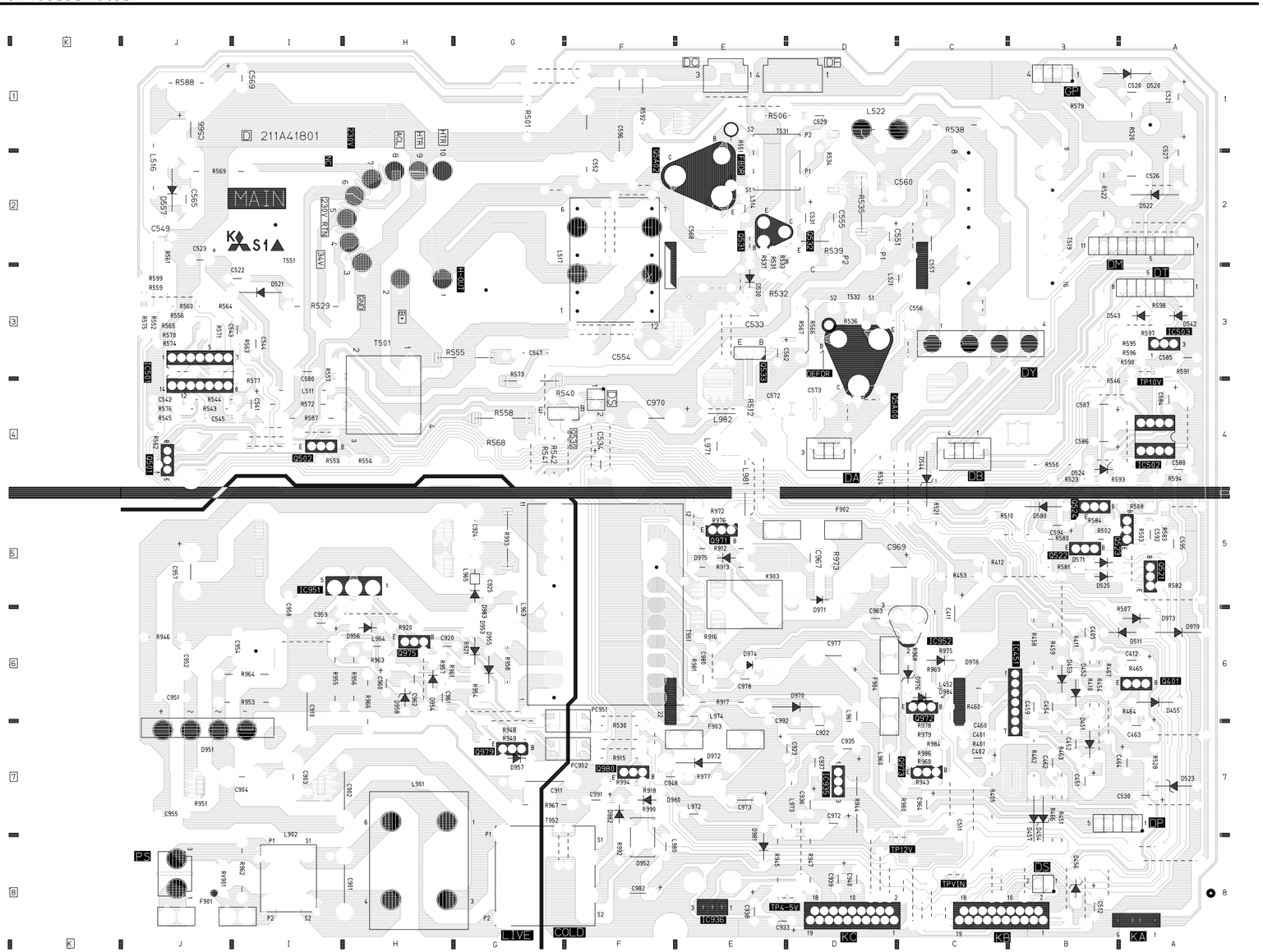



MAIN
930B874 0.1.2 1.2.3.4.5.6.7.8.9.0
SEE FUSE NOTICE FOR FUSE F902 125V 2A
SEE FUSE NOTICE FOR FUSE F904 125V 6.3A
SEE FUSE NOTICE FOR FUSE F903 125V 2+A
SEE FUSE NOTICE FOR FUSE F901 125V 5A
COLD
LIVE

PCB-MAIN

SYMBOL NO.	ADDRESS
D451	B7
D452	B6
D453	B6
D454	B8
D455	A6
D456	B8
D457	B8
D520	A1
D521	I3
D522	A2
D523	A7
D524	B4
D525	B5
D530	E3
D542	A3
D543	A3
D544	C5
D557	J2
D571	B5
D580	B5
D951	I7
D952	F7
D953	G6
D954	H6
D955	G6
D956	H6
D957	G7
D958	H6
D970	D6
D971	D5
D972	E7
D973	B6
D974	E6
D975	E5
D978	C6
D979	A6
D980	F7
D981	E8
D982	F7
D983	G6
D984	C6
F901	J8
F903	E7
F904	D6
IC451	B6
IC501	J3
IC502	A4
IC503	A3
IC935	D7
IC936	E8
IC951	H5
IC952	E6
K903	C6
L452	C6
L511	I4
L514	E2
L516	J1
L517	F2
L521	C3
L522	D1

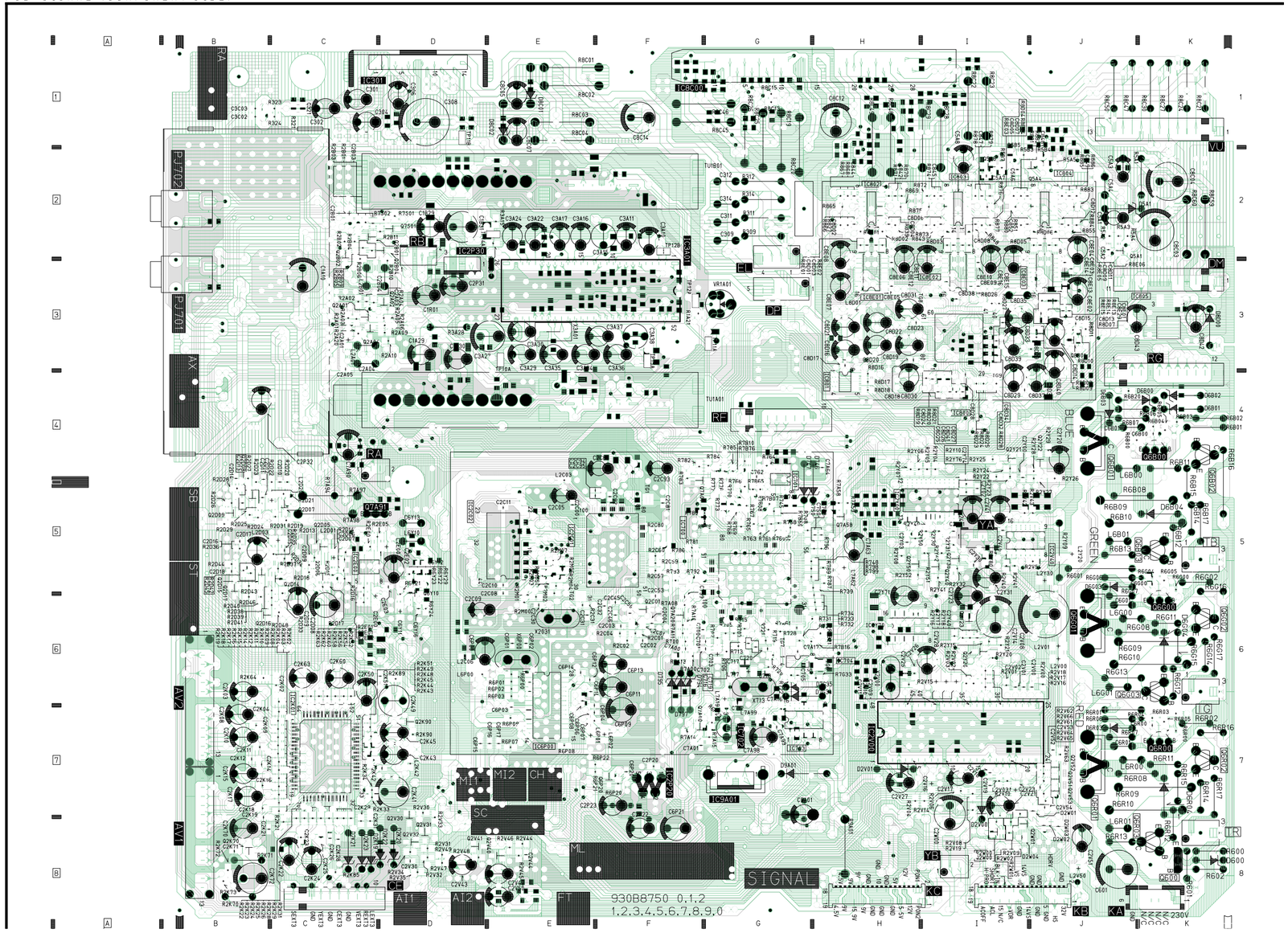
SYMBOL NO.	ADDRESS
L901	H7
L902	I8
L960	D7
L963	G6
L964	H6
L965	G5
L971	E4
L973	D7
L974	E6
L980	F8
PC951	F7
PC952	F7
Q401	A6
Q501	J4
Q502	I4
Q521	A5
Q523	A5
Q524	B5
Q530	F4
Q531	E2
Q532	D2
Q533	E3
Q5A00	D3
Q5A02	E2
Q971	E5
Q972	C6
Q973	C7
Q975	H6
Q979	G7
Q980	F7
RV901	J8
T501	H3
T519	B2
T531	D2
T532	D2
T551	H2
T951	F5
T952	F8
TP10V	A4
TP12V	C8
TP4-5V	D8
TPVIN	C8



PCB-MAIN

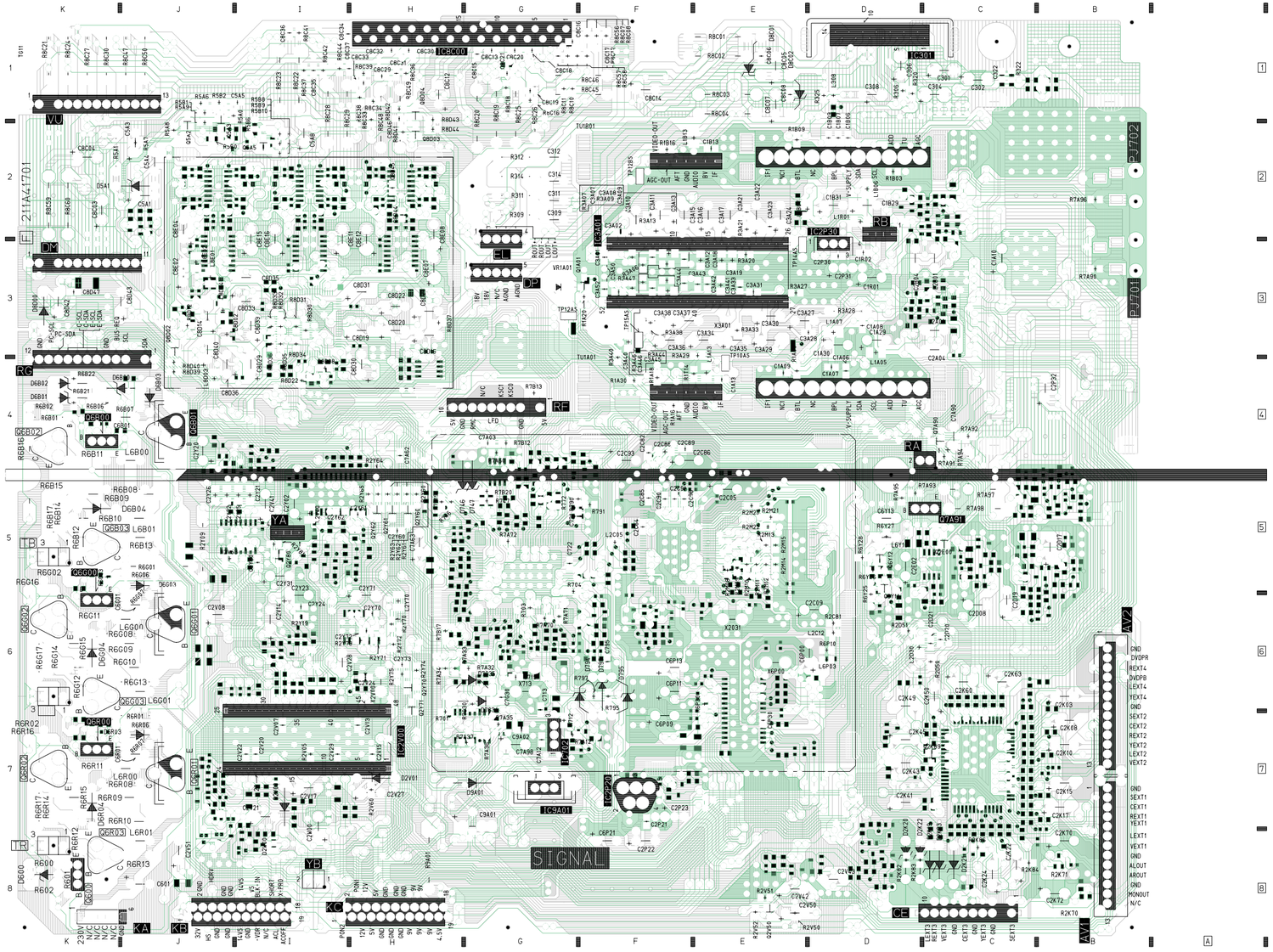
SYMBOL NO.	ADDRESS
D451	B7
D452	B6
D453	B6
D454	B7
D455	A6
D456	B8
D457	B7
D511	A6
D520	A1
D520	E3
D521	I3
D522	A2
D523	A7
D524	B4
D525	D5
D542	A3
D543	A3
D544	C4
D557	J2
D571	B5
D580	B5
D951	J7
D952	F8
D953	G6
D954	H6
D955	G6
D956	H6
D957	G7
D958	H6
D970	D6
D971	D5
D972	E7
D973	A6
D974	E6
D975	E5
D976	C6
D979	A6
D980	F7
D981	E8
D982	F7
D983	G5
D984	C6
F901	J8
F902	D5
F903	E7
F904	D6
IC451	B6
IC501	J3
IC502	A4
IC503	A3
IC935	D7
IC936	I5
IC951	E8
IC952	C6
K903	E5
L452	C6
L511	I4
L517	G2
L521	D3
L521	C3

SYMBOL NO.	ADDRESS
L522	D1
L901	H7
L902	I8
L960	D7
L961	D6
L963	G5
L965	G5
L971	E4
L972	E7
L973	D7
L981	E4
L982	E4
PC951	F6
PC952	F7
Q401	A6
Q501	J4
Q502	I4
Q521	A5
Q522	B5
Q523	A5
Q530	G4
Q531	E2
Q532	E2
Q533	E3
Q5A02	F2
Q50A00	D3
Q971	E5
Q972	C6
Q973	C7
Q979	G7
Q980	F7
RV901	J8
T501	H3
T519	B2
T531	E1
T532	D3
T551	I2
T951	G5
T952	G8
T952	F8
TP10V	A4
TP12V	C8
TP4-5V	D8
TPVIN	C8



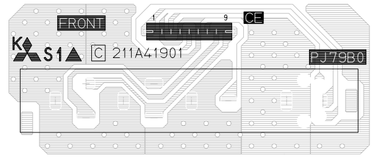
PCB-SIGNAL

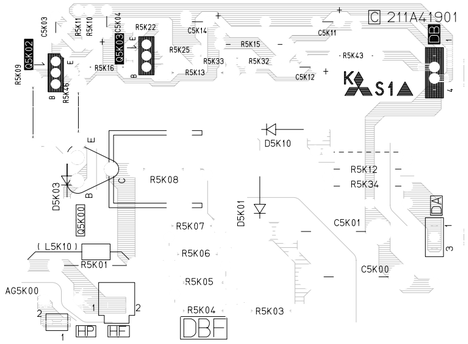
SYMBOL NO.	ADDRESS	SYMBOL NO.	ADDRESS
D5A1	J2	PJ701	B3
D6B00	K4	PJ702	B2
D6B01	K4	Q2A01	C3
D6B02	K4	Q2A04	C3
D6B03	J4	Q2B01	D2
D6B04	K5	Q2B02	C2
D6G03	J5	Q2B04	D2
D6G04	K6	Q2C01	F6
D746	G5	Q2C05	C5
D747	G5	Q2C06	C5
D794	F6	Q2C07	C5
D795	F6	Q2C09	B5
D797	F6	Q2C14	C5
D7G34	G6	Q2C15	B5
D7G35	G6	Q2C16	B6
D8C01	E1	Q2C17	B5
D8C02	E1	Q2Y20	I6
D8G00	G2	Q2Y21	I4
IC2C01	E5	Q2Y22	J4
IC2C02	D5	Q2Y23	I6
IC2E00	C5	Q2Y30	I5
IC2P30	D2	Q2Y40	I5
IC2V40	J5	Q2Y50	H5
IC2Y70	H6	Q5A1	J2
IC301	D1	Q6B00	K4
IC3A01	F3	Q6B01	J4
IC6P00	E6	Q6B02	K4
IC700	F5	Q6B03	K5
IC701	G4	Q6G00	K6
IC704	H6	Q6G01	J6
IC800	I4	Q6G02	K6
IC802	H4	Q6G03	K6
IC803	I2	Q6Y10	D5A1
IC804	J2	Q7A01	F4
IC805	K3	Q7A20	F6
IC8C00	F1	Q7A58	H5
IC8E01	H3	Q7A91	C5
IC8E02	I3	Q8D01	J3
IC8E03	I3	TP10A	E3
L2A01	C3	TP11A	G3
L2B01	C3	TP11B	D1
L2C01	F6	TP12A	F3
L2C03	E4	TP12B	F2
L2C06	D6	TP14A	D2
L2D01	C5	TP15A	F3
L2D03	B5	TU1A01	G4
L2D20	C5	TU1B01	D2
L2E00	D5A1	VR1A01	G3
L2V01	J6	X2C01	E6
L2Y20	J5	X2V00	H6
L2Y30	J5	X3A01	E3
L6B00	J5	X6P00	E6
L6B01	J4	X713	G6
L6G00	J6		
L6G01	J6		
L6P00	D6		
L6Y10	D5A1		
L717	G6		
L7A62	H5		
L8D01	H3		

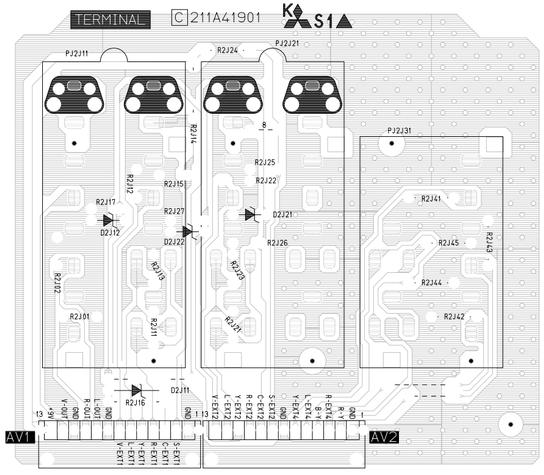


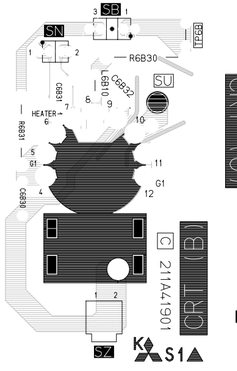
PCB-SIGNAL

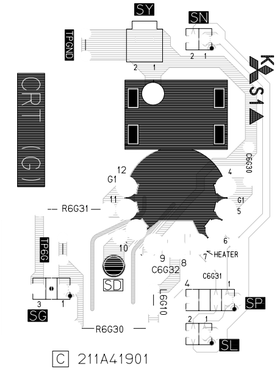
SYMBOL NO.	ADDRESS
PJ701	B3
L2A01	C3
Q7A90	C4
Q7A91	C5
D2K20	C8
IC301	D1
L1B06	D2
IC2P30	D3
L1A05	D4
L6Y10	D6
Q2V50	D8
D8C01	E1
L1B07	E2
X3A01	E3
TP10A	E4
X2031	E6
L1B13	F2
Q1A01	F3
TU1A01	F4
L2C05	F5
D794	F6
VR1A01	G3
D747	G5
D7C35	G6
D9A01	G7
IC8C00	H1
Q8C03	H2
Q2Y62	H5
Q2Y70	H6
D2V01	H7
Q5A5	I2
Q2Y80	I5
IC2V00	I7
D2W00	I8
D5A1	J2
L6E01	J3
D6B03	J4
D6G03	J5
Q6G01	J6
D6R03	J7
D8000	K3
D6B02	K4
Q6B03	K5
Q6G02	K6
Q6R02	K7
Q6R03	K8

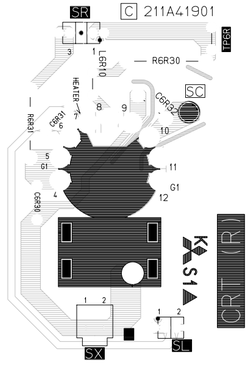

FRONT
CE
211A41901
PJ79B0

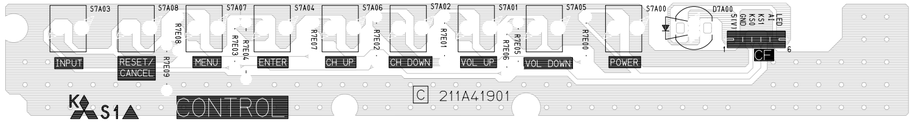

211A41901
CB
R5K08
R5K07
R5K06
R5K05
R5K04
R5K03
R5K12
R5K34
C5K01
C5K00
D5K10
D5K01
D5K03
L5K10
R5K01
AGSK00
HP
HF
DBF

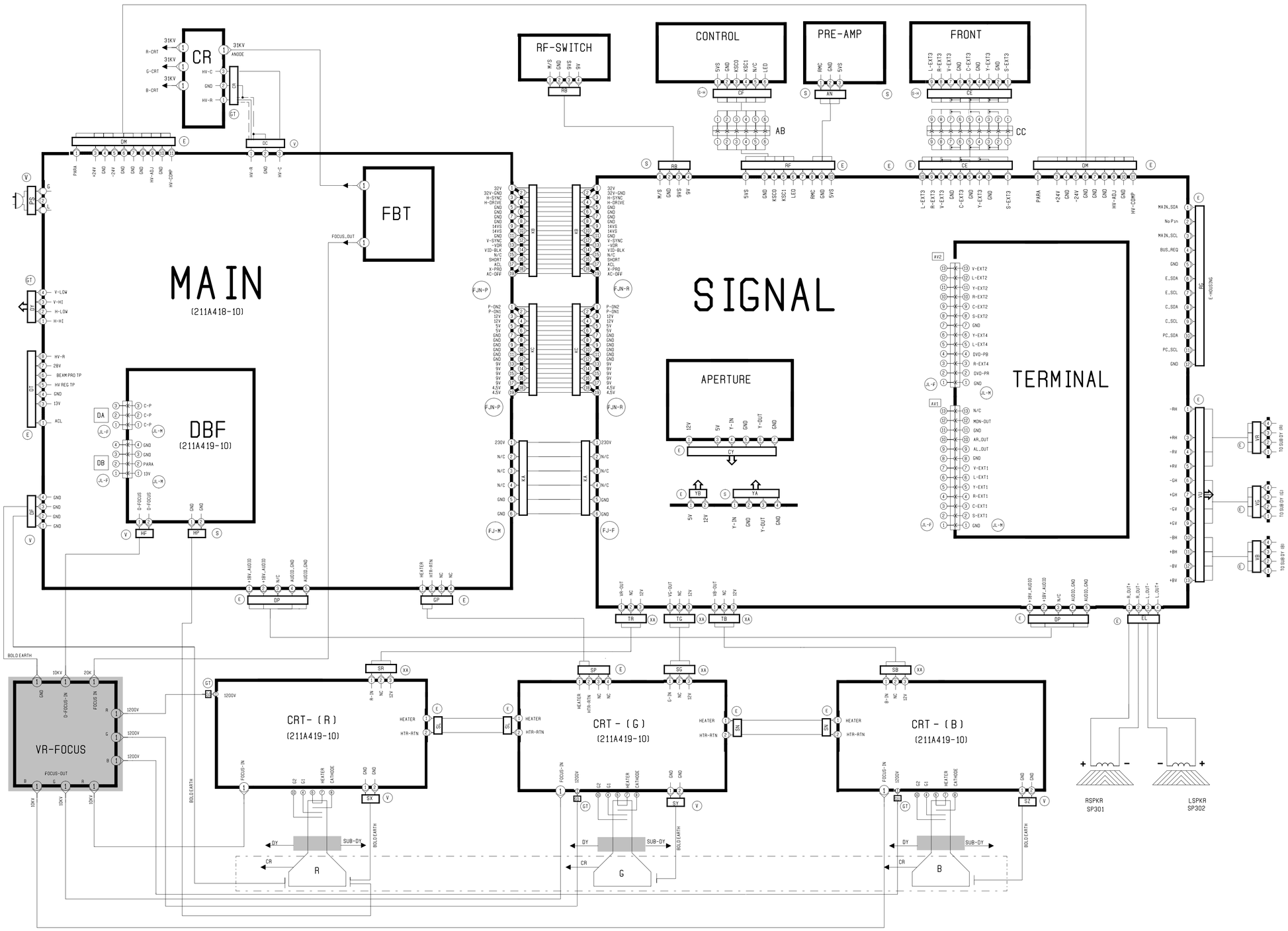

TERMINAL
211A41901
PJ2J11
R2J24
PJ2J21
PJ2J31
R2J25
R2J22
R2J41
D2J21
R2J26
R2J45
R2J44
R2J42
D2J11
R2J16
AV1
AV2


SB
SN
TEST
R6B30
SU
HEATER
CRT (B)
211A41901
SZ


SY
SN
TEST
CRT (G)
R6G31
R6G30
SD
SG
SP
SL
211A41901


SR
211A41901
TEST
R6R30
SC
HEATER
CRT (R)
SX
SL


INPUT
RESET/ CANCEL
MENU
ENTER
CH_UP
CH_DOWN
VOL_UP
VOL_DOWN
POWER
CE
CONTROL
211A41901



* NOTES:

1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Waveforms were taken using a standard color bar signal.
3. TP13, etc. show Test Points.
4. CAPACITORS

Value	Not indicated	[PF, for numbers more than 1 μF, for numbers less than 1	
Dielectric Strength	Not indicated :50V		
Tolerance	Not indicated = ±10%	[No tolerance is indicated for electrolytic capacitors and ± 20%	
	G = ±2%	P = +100%	Q = +30%	C = ±0.25PF
	J = ±5%	-0%	-10%	D = ±0.5PF
	K = ±10%	Z = +80%	T = +200%	F = ±1PF
	M = ±20%	-20%	-0%	D = ±2PF

Type	I	Parts except for chips	Not indicated :Ceramic capacitor (MF) :Polyester capacitor (PP) :Polypropylene film capacitor (ALM) :Aluminus electrolytic capacitor (TF) :Twin film capacitor (SC) :Semiconductor Ceramic capacitor (MP) :Metalized paper (MPP) :Metalized plastic film capacitor (MMF) :Metalized polyester capacitor (MF,PP) :Polyester polypropylene film capacitor (PS) :Styrol capacitor (TAN) or (TANT) :Tantalum capacitor :Electrolytic capacitor (NP) :Non polarized electrolytic capacitor
	II	Chips	Not indicated :Ceramic capacitor chip :Electrolytic capacitor (NP) :Non polarized electrolytic capacitor chip
Characteristic (only ceramic capacitor)	Not indicated :F or B (high dielectric percentage) CH, SL, etc. :Temperature compensating types		

5. RESISTORS

Value	Not indicated = Ohm K = 1,000 Ohm M = 1,000,000 Ohm		
Wattage	Parts except for chips	Not indicated = 1/4W or 1/6W	
	Chips	Not indicated = 1/10W	
Tolerance	Not indicated = ±5% D = ±0.5% J = ±5% F = ±1% K = ±10%		
Type	I	Parts except for chips	Not indicated :Carbon resistor (S) :Fixed composition resistor (MB) :Metal oxide film resistor (type B) (CE) :Cemented resistor (W) :Wire wound resistor (M) :Metal film resistor (MPC) :Metal plate cement resistor (ML) :Metal liner resistor
	II	Chip	Not indicated :Chip resistor

6. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, CAREFULLY READ THE PRODUCT SAFETY NOTICE IN THE SERVICE MANUAL. DO NOT DEGRADE THE SAFETY OF THE PRODUCT THROUGH IMPROPER SERVICING.

SERVICE TECHNICIAN WARNING:
X-RADIATION PRECAUTION
THIS PRODUCT INCLUDES CRITICAL ELECTRICAL AND MECHANICAL PARTS ESSENTIAL FOR X-RADIATION PROTECTION.
TO AVOID POSSIBLE EXPOSURE TO X-RADIATION, TAKE X-RADIATION PROTECTIVE MEASURES FOR PERSONNEL DURING SERVICING.
SEE SERVICE INSTRUCTIONS FOR SPECIFIED REPLACEMENT PARTS AND SERVICE ADJUSTMENTS.

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VS-45609
VS-50609
VS-55609
VS-60609
VS-60719
VS-70709

HOT COLD

PCB-CRT (G) SP

PCB-SIGNAL-3 KA

HV-BLOCK

IC951 STR-F6528

IC501 LA6324N

IC502 UPC393C

IC935 NJM7805FA

IC936 NJM7809F/AN7809F

IC451 LA7845N

IC503 LM4040BIZ-10.0

IC952 SE130N

Q979 2SC2274-F /2SC2274K-F

Q975 2SA1115-E,F /2SA933S-R,S

Q980 2SC1740S-S /2SC3311A-S

Q971 2SC1740S-S /2SC3311A-S

Q972 2SC3311A-R,S

Q973 2SC1740S-R,S /2SC3311A-R,S

Q501 2SC2073-B,C

Q502 2SC1740S-R,S /2SC3311A-R,S

Q531 2SC2482

Q532 2SC2482

Q530 2SA933S-R,S /2SA1309A-R,S

Q5A00 2SC5689

Q5A02 2SC5689

Q533 2SC1740S-R,S /2SC3311A-R,S

Q522 2SC1740S-R,S /2SC3311A-R,S

Q521 2SC1740S-R,S /2SC3311A-R,S

Q523 2SA1115-E,F /2SA933S-R,S

Q524 2SC1740S-R,S /2SC3311A-R,S

Q401 2SC1740S-R,S /2SC3311A-R,S

T951 ZTS6498-49

T501 ZTS6603

T519

T532

T551

L901 L902 L963 L964 L965 L974 L980 L981 L982 L983 L984 L985 L986 L987 L988 L989 L990 L991 L992 L993 L994 L995 L996 L997 L998 L999 L9A0 L9A1 L9A2 L9A3 L9A4 L9A5 L9A6 L9A7 L9A8 L9A9 L9B0 L9B1 L9B2 L9B3 L9B4 L9B5 L9B6 L9B7 L9B8 L9B9 L9C0 L9C1 L9C2 L9C3 L9C4 L9C5 L9C6 L9C7 L9C8 L9C9 L9D0 L9D1 L9D2 L9D3 L9D4 L9D5 L9D6 L9D7 L9D8 L9D9 L9E0 L9E1 L9E2 L9E3 L9E4 L9E5 L9E6 L9E7 L9E8 L9E9 L9F0 L9F1 L9F2 L9F3 L9F4 L9F5 L9F6 L9F7 L9F8 L9F9 L9G0 L9G1 L9G2 L9G3 L9G4 L9G5 L9G6 L9G7 L9G8 L9G9 L9H0 L9H1 L9H2 L9H3 L9H4 L9H5 L9H6 L9H7 L9H8 L9H9 L9J0 L9J1 L9J2 L9J3 L9J4 L9J5 L9J6 L9J7 L9J8 L9J9 L9K0 L9K1 L9K2 L9K3 L9K4 L9K5 L9K6 L9K7 L9K8 L9K9 L9L0 L9L1 L9L2 L9L3 L9L4 L9L5 L9L6 L9L7 L9L8 L9L9 L9M0 L9M1 L9M2 L9M3 L9M4 L9M5 L9M6 L9M7 L9M8 L9M9 L9N0 L9N1 L9N2 L9N3 L9N4 L9N5 L9N6 L9N7 L9N8 L9N9 L9P0 L9P1 L9P2 L9P3 L9P4 L9P5 L9P6 L9P7 L9P8 L9P9 L9Q0 L9Q1 L9Q2 L9Q3 L9Q4 L9Q5 L9Q6 L9Q7 L9Q8 L9Q9 L9R0 L9R1 L9R2 L9R3 L9R4 L9R5 L9R6 L9R7 L9R8 L9R9 L9S0 L9S1 L9S2 L9S3 L9S4 L9S5 L9S6 L9S7 L9S8 L9S9 L9T0 L9T1 L9T2 L9T3 L9T4 L9T5 L9T6 L9T7 L9T8 L9T9 L9U0 L9U1 L9U2 L9U3 L9U4 L9U5 L9U6 L9U7 L9U8 L9U9 L9V0 L9V1 L9V2 L9V3 L9V4 L9V5 L9V6 L9V7 L9V8 L9V9 L9W0 L9W1 L9W2 L9W3 L9W4 L9W5 L9W6 L9W7 L9W8 L9W9 L9X0 L9X1 L9X2 L9X3 L9X4 L9X5 L9X6 L9X7 L9X8 L9X9 L9Y0 L9Y1 L9Y2 L9Y3 L9Y4 L9Y5 L9Y6 L9Y7 L9Y8 L9Y9 L9Z0 L9Z1 L9Z2 L9Z3 L9Z4 L9Z5 L9Z6 L9Z7 L9Z8 L9Z9 L9AA0 L9AA1 L9AA2 L9AA3 L9AA4 L9AA5 L9AA6 L9AA7 L9AA8 L9AA9 L9AB0 L9AB1 L9AB2 L9AB3 L9AB4 L9AB5 L9AB6 L9AB7 L9AB8 L9AB9 L9AC0 L9AC1 L9AC2 L9AC3 L9AC4 L9AC5 L9AC6 L9AC7 L9AC8 L9AC9 L9AD0 L9AD1 L9AD2 L9AD3 L9AD4 L9AD5 L9AD6 L9AD7 L9AD8 L9AD9 L9AE0 L9AE1 L9AE2 L9AE3 L9AE4 L9AE5 L9AE6 L9AE7 L9AE8 L9AE9 L9AF0 L9AF1 L9AF2 L9AF3 L9AF4 L9AF5 L9AF6 L9AF7 L9AF8 L9AF9 L9AG0 L9AG1 L9AG2 L9AG3 L9AG4 L9AG5 L9AG6 L9AG7 L9AG8 L9AG9 L9AH0 L9AH1 L9AH2 L9AH3 L9AH4 L9AH5 L9AH6 L9AH7 L9AH8 L9AH9 L9AI0 L9AI1 L9AI2 L9AI3 L9AI4 L9AI5 L9AI6 L9AI7 L9AI8 L9AI9 L9AJ0 L9AJ1 L9AJ2 L9AJ3 L9AJ4 L9AJ5 L9AJ6 L9AJ7 L9AJ8 L9AJ9 L9AK0 L9AK1 L9AK2 L9AK3 L9AK4 L9AK5 L9AK6 L9AK7 L9AK8 L9AK9 L9AL0 L9AL1 L9AL2 L9AL3 L9AL4 L9AL5 L9AL6 L9AL7 L9AL8 L9AL9 L9AM0 L9AM1 L9AM2 L9AM3 L9AM4 L9AM5 L9AM6 L9AM7 L9AM8 L9AM9 L9AN0 L9AN1 L9AN2 L9AN3 L9AN4 L9AN5 L9AN6 L9AN7 L9AN8 L9AN9 L9AO0 L9AO1 L9AO2 L9AO3 L9AO4 L9AO5 L9AO6 L9AO7 L9AO8 L9AO9 L9AP0 L9AP1 L9AP2 L9AP3 L9AP4 L9AP5 L9AP6 L9AP7 L9AP8 L9AP9 L9AQ0 L9AQ1 L9AQ2 L9AQ3 L9AQ4 L9AQ5 L9AQ6 L9AQ7 L9AQ8 L9AQ9 L9AR0 L9AR1 L9AR2 L9AR3 L9AR4 L9AR5 L9AR6 L9AR7 L9AR8 L9AR9 L9AS0 L9AS1 L9AS2 L9AS3 L9AS4 L9AS5 L9AS6 L9AS7 L9AS8 L9AS9 L9AT0 L9AT1 L9AT2 L9AT3 L9AT4 L9AT5 L9AT6 L9AT7 L9AT8 L9AT9 L9AU0 L9AU1 L9AU2 L9AU3 L9AU4 L9AU5 L9AU6 L9AU7 L9AU8 L9AU9 L9AV0 L9AV1 L9AV2 L9AV3 L9AV4 L9AV5 L9AV6 L9AV7 L9AV8 L9AV9 L9AW0 L9AW1 L9AW2 L9AW3 L9AW4 L9AW5 L9AW6 L9AW7 L9AW8 L9AW9 L9AX0 L9AX1 L9AX2 L9AX3 L9AX4 L9AX5 L9AX6 L9AX7 L9AX8 L9AX9 L9AY0 L9AY1 L9AY2 L9AY3 L9AY4 L9AY5 L9AY6 L9AY7 L9AY8 L9AY9 L9AZ0 L9AZ1 L9AZ2 L9AZ3 L9AZ4 L9AZ5 L9AZ6 L9AZ7 L9AZ8 L9AZ9 L9BA0 L9BA1 L9BA2 L9BA3 L9BA4 L9BA5 L9BA6 L9BA7 L9BA8 L9BA9 L9BB0 L9BB1 L9BB2 L9BB3 L9BB4 L9BB5 L9BB6 L9BB7 L9BB8 L9BB9 L9BC0 L9BC1 L9BC2 L9BC3 L9BC4 L9BC5 L9BC6 L9BC7 L9BC8 L9BC9 L9BD0 L9BD1 L9BD2 L9BD3 L9BD4 L9BD5 L9BD6 L9BD7 L9BD8 L9BD9 L9BE0 L9BE1 L9BE2 L9BE3 L9BE4 L9BE5 L9BE6 L9BE7 L9BE8 L9BE9 L9BF0 L9BF1 L9BF2 L9BF3 L9BF4 L9BF5 L9BF6 L9BF7 L9BF8 L9BF9 L9BG0 L9BG1 L9BG2 L9BG3 L9BG4 L9BG5 L9BG6 L9BG7 L9BG8 L9BG9 L9BH0 L9BH1 L9BH2 L9BH3 L9BH4 L9BH5 L9BH6 L9BH7 L9BH8 L9BH9 L9BI0 L9BI1 L9BI2 L9BI3 L9BI4 L9BI5 L9BI6 L9BI7 L9BI8 L9BI9 L9BJ0 L9BJ1 L9BJ2 L9BJ3 L9BJ4 L9BJ5 L9BJ6 L9BJ7 L9BJ8 L9BJ9 L9BK0 L9BK1 L9BK2 L9BK3 L9BK4 L9BK5 L9BK6 L9BK7 L9BK8 L9BK9 L9BL0 L9BL1 L9BL2 L9BL3 L9BL4 L9BL5 L9BL6 L9BL7 L9BL8 L9BL9 L9BM0 L9BM1 L9BM2 L9BM3 L9BM4 L9BM5 L9BM6 L9BM7 L9BM8 L9BM9 L9BN0 L9BN1 L9BN2 L9BN3 L9BN4 L9BN5 L9BN6 L9BN7 L9BN8 L9BN9 L9BO0 L9BO1 L9BO2 L9BO3 L9BO4 L9BO5 L9BO6 L9BO7 L9BO8 L9BO9 L9BP0 L9BP1 L9BP2 L9BP3 L9BP4 L9BP5 L9BP6 L9BP7 L9BP8 L9BP9 L9BQ0 L9BQ1 L9BQ2 L9BQ3 L9BQ4 L9BQ5 L9BQ6 L9BQ7 L9BQ8 L9BQ9 L9BR0 L9BR1 L9BR2 L9BR3 L9BR4 L9BR5 L9BR6 L9BR7 L9BR8 L9BR9 L9BS0 L9BS1 L9BS2 L9BS3 L9BS4 L9BS5 L9BS6 L9BS7 L9BS8 L9BS9 L9BT0 L9BT1 L9BT2 L9BT3 L9BT4 L9BT5 L9BT6 L9BT7 L9BT8 L9BT9 L9BU0 L9BU1 L9BU2 L9BU3 L9BU4 L9BU5 L9BU6 L9BU7 L9BU8 L9BU9 L9BV0 L9BV1 L9BV2 L9BV3 L9BV4 L9BV5 L9BV6 L9BV7 L9BV8 L9BV9 L9BW0 L9BW1 L9BW2 L9BW3 L9BW4 L9BW5 L9BW6 L9BW7 L9BW8 L9BW9 L9BX0 L9BX1 L9BX2 L9BX3 L9BX4 L9BX5 L9BX6 L9BX7 L9BX8 L9BX9 L9BY0 L9BY1 L9BY2 L9BY3 L9BY4 L9BY5 L9BY6 L9BY7 L9BY8 L9BY9 L9BZ0 L9BZ1 L9BZ2 L9BZ3 L9BZ4 L9BZ5 L9BZ6 L9BZ7 L9BZ8 L9BZ9 L9CA0 L9CA1 L9CA2 L9CA3 L9CA4 L9CA5 L9CA6 L9CA7 L9CA8 L9CA9 L9CB0 L9CB1 L9CB2 L9CB3 L9CB4 L9CB5 L9CB6 L9CB7 L9CB8 L9CB9 L9CC0 L9CC1 L9CC2 L9CC3 L9CC4 L9CC5 L9CC6 L9CC7 L9CC8 L9CC9 L9CD0 L9CD1 L9CD2 L9CD3 L9CD4 L9CD5 L9CD6 L9CD7 L9CD8 L9CD9 L9CE0 L9CE1 L9CE2 L9CE3 L9CE4 L9CE5 L9CE6 L9CE7 L9CE8 L9CE9 L9CF0 L9CF1 L9CF2 L9CF3 L9CF4 L9CF5 L9CF6 L9CF7 L9CF8 L9CF9 L9CG0 L9CG1 L9CG2 L9CG3 L9CG4 L9CG5 L9CG6 L9CG7 L9CG8 L9CG9 L9CH0 L9CH1 L9CH2 L9CH3 L9CH4 L9CH5 L9CH6 L9CH7 L9CH8 L9CH9 L9CI0 L9CI1 L9CI2 L9CI3 L9CI4 L9CI5 L9CI6 L9CI7 L9CI8 L9CI9 L9CJ0 L9CJ1 L9CJ2 L9CJ3 L9CJ4 L9CJ5 L9CJ6 L9CJ7 L9CJ8 L9CJ9 L9CK0 L9CK1 L9CK2 L9CK3 L9CK4 L9CK5 L9CK6 L9CK7 L9CK8 L9CK9 L9CL0 L9CL1 L9CL2 L9CL3 L9CL4 L9CL5 L9CL6 L9CL7 L9CL8 L9CL9 L9CM0 L9CM1 L9CM2 L9CM3 L9CM4 L9CM5 L9CM6 L9CM7 L9CM8 L9CM9 L9CN0 L9CN1 L9CN2 L9CN3 L9CN4 L9CN5 L9CN6 L9CN7 L9CN8 L9CN9 L9CO0 L9CO1 L9CO2 L9CO3 L9CO4 L9CO5 L9CO6 L9CO7 L9CO8 L9CO9 L9CP0 L9CP1 L9CP2 L9CP3 L9CP4 L9CP5 L9CP6 L9CP7 L9CP8 L9CP9 L9CQ0 L9CQ1 L9CQ2 L9CQ3 L9CQ4 L9CQ5 L9CQ6 L9CQ7 L9CQ8 L9CQ9 L9CR0 L9CR1 L9CR2 L9CR3 L9CR4 L9CR5 L9CR6 L9CR7 L9CR8 L9CR9 L9CS0 L9CS1 L9CS2 L9CS3 L9CS4 L9CS5 L9CS6 L9CS7 L9CS8 L9CS9 L9CT0 L9CT1 L9CT2 L9CT3 L9CT4 L9CT5 L9CT6 L9CT7 L9CT8 L9CT9 L9CU0 L9CU1 L9CU2 L9CU3 L9CU4 L9CU5 L9CU6 L9CU7 L9CU8 L9CU9 L9CV0 L9CV1 L9CV2 L9CV3 L9CV4 L9CV5 L9CV6 L9CV7 L9CV8 L9CV9 L9CW0 L9CW1 L9CW2 L9CW3 L9CW4 L9CW5 L9CW6 L9CW7 L9CW8 L9CW9 L9CX0 L9CX1 L9CX2 L9CX3 L9CX4 L9CX5 L9CX6 L9CX7 L9CX8 L9CX9 L9CY0 L9CY1 L9CY2 L9CY3 L9CY4 L9CY5 L9CY6 L9CY7 L9CY8 L9CY9 L9CZ0 L9CZ1 L9CZ2 L9CZ3 L9CZ4 L9CZ5 L9CZ6 L9CZ7 L9CZ8 L9CZ9 L9DA0 L9DA1 L9DA2 L9DA3 L9DA4 L9DA5 L9DA6 L9DA7 L9DA8 L9DA9 L9DB0 L9DB1 L9DB2 L9DB3 L9DB4 L9DB5 L9DB6 L9DB7 L9DB8 L9DB9 L9DC0 L9DC1 L9DC2 L9DC3 L9DC4 L9DC5 L9DC6 L9DC7 L9DC8 L9DC9 L9DD0 L9DD1 L9DD2 L9DD3 L9DD4 L9DD5 L9DD6 L9DD7 L9DD8 L9DD9 L9DE0 L9DE1 L9DE2 L9DE3 L9DE4 L9DE5 L9DE6 L9DE7 L9DE8 L9DE9 L9DF0 L9DF1 L9DF2 L9DF3 L9DF4 L9DF5 L9DF6 L9DF7 L9DF8 L9DF9 L9DG0 L9DG1 L9DG2 L9DG3 L9DG4 L9DG5 L9DG6 L9DG7 L9DG8 L9DG9 L9DH0 L9DH1 L9DH2 L9DH3 L9DH4 L9DH5 L9DH6 L9DH7 L9DH8 L9DH9 L9DI0 L9DI1 L9DI2 L9DI3 L9DI4 L9DI5 L9DI6 L9DI7 L9DI8 L9DI9 L9DJ0 L9DJ1 L9DJ2 L9DJ3 L9DJ4 L9DJ5 L9DJ6 L9DJ7 L9DJ8 L9DJ9 L9DK0 L9DK1 L9DK2 L9DK3 L9DK4 L9DK5 L9DK6 L9DK7 L9DK8 L9DK9 L9DL0 L9DL1 L9DL2 L9DL3 L9DL4 L9DL5 L9DL6 L9DL7 L9DL8 L9DL9 L9DM0 L9DM1 L9DM2 L9DM3 L9DM4 L9DM5 L9DM6 L9DM7 L9DM8 L9DM9 L9DN0 L9DN1 L9DN2 L9DN3 L9DN4 L9DN5 L9DN6 L9DN7 L9DN8 L9DN9 L9DO0 L9DO1 L9DO2 L9DO3 L9DO4 L9DO5 L9DO6 L9DO7 L9DO8 L9DO9 L9DP0 L9DP1 L9DP2 L9DP3 L9DP4 L9DP5 L9DP6 L9DP7 L9DP8 L9DP9 L9DQ0 L9DQ1 L9DQ2 L9DQ3 L9DQ4 L9DQ5 L9DQ6 L9DQ7 L9DQ8 L9DQ9 L9DR0 L9DR1 L9DR2 L9DR3 L9DR4 L9DR5 L9DR6 L9DR7 L9DR8 L9DR9 L9DS0 L9DS1 L9DS2 L9DS3 L9DS4 L9DS5 L9DS6 L9DS7 L9DS8 L9DS9 L9DT0 L9DT1 L9DT2 L9DT3 L9DT4 L9DT5 L9DT6 L9DT7 L9DT8 L9DT9 L9DU0 L9DU1 L9DU2 L9DU3 L9DU4 L9DU5 L9DU6 L9DU7 L9DU8 L9DU9 L9DV0 L9DV1 L9DV2 L9DV3 L9DV4 L9DV5 L9DV6 L9DV7 L9DV8 L9DV9 L9DW0 L9DW1 L9DW2 L9DW3 L9DW4 L9DW5 L9DW6 L9DW7 L9DW8 L9DW9 L9DX0 L9DX1 L9DX2 L9DX3 L9DX4 L9DX5 L9DX6 L9DX7 L9DX8 L9DX9 L9DY0 L9DY1 L9DY2 L9DY3 L9DY4 L9DY5 L9DY6 L9DY7 L9DY8 L9DY9 L9DZ0 L9DZ1 L9DZ2 L9DZ3 L9DZ4 L9DZ5 L9DZ6 L9DZ7 L9DZ8 L9DZ9 L9EA0 L9EA1 L9EA2 L9EA3 L9EA4 L9EA5 L9EA6 L9EA7 L9EA8 L9EA9 L9EB0 L9EB1 L9EB2 L9EB3 L9EB4 L9EB5 L9EB6 L9EB7 L9EB8 L9EB9 L9EC0 L9EC1 L9EC2 L9EC3 L9EC4 L9EC5 L9EC6 L9EC7 L9EC8 L9EC9 L9ED0 L9ED1 L9ED2 L9ED3 L9ED4 L9ED5 L9ED6 L9ED7 L9ED8 L9ED9 L9EE0 L9EE1 L9EE2 L9EE3 L9EE4 L9EE5 L9EE6 L9EE7 L9EE8 L9EE9 L9EF0 L9EF1 L9EF2 L9EF3 L9EF4 L9EF5 L9EF6 L9EF7 L9EF8 L9EF9 L9EG0 L9EG1 L9EG2 L9EG3 L9EG4 L9EG5 L9EG6 L9EG7 L9EG8 L9EG9 L9EH0 L9EH1 L9EH2 L9EH3 L9EH4 L9EH5 L9EH6 L9EH7 L9EH8 L9EH9 L9EI0 L9EI1 L9EI2 L9EI3 L9EI4 L9EI5 L9EI6 L9EI7 L9EI8 L9EI9 L9EJ0 L9EJ1 L9EJ2 L9EJ3 L9EJ4 L9EJ5 L9EJ6 L9EJ7 L9EJ8 L9EJ9 L9EK0 L9EK1 L9EK2 L9EK3 L9EK4 L9EK5 L9EK6 L9EK7 L9EK8 L9EK9 L9EL0 L9EL1 L9EL2 L9EL3 L9EL4 L9EL5 L9EL6 L9EL7 L9EL8 L9EL9 L9EM0 L9EM1 L9EM2 L9EM3 L9EM4 L9EM5 L9EM6 L9EM7 L9EM8 L9EM9 L9EN0 L9EN1 L9EN2 L9EN3 L9EN4 L9EN5 L9EN6 L9EN7 L9EN8 L9EN9 L9EO0 L9EO1 L9EO2 L9EO3 L9EO4 L9EO5 L9EO6 L9EO7 L9EO8 L9EO9 L9EP0 L9EP1 L9EP2 L9EP3 L9EP4 L9EP5 L9EP6 L9EP7 L9EP8 L9EP9 L9EQ0 L9EQ1 L9EQ2 L9EQ3 L9EQ4 L9EQ5 L9EQ6 L9EQ7 L9EQ8 L9EQ9 L9ER0 L9ER1 L9ER2 L9ER3 L9ER4 L9ER5 L9ER6 L9ER7 L9ER8 L9ER9 L9ES0 L9ES1 L9ES2 L9ES3 L9ES4 L9ES5 L9ES6 L9ES7 L9ES8 L9ES9 L9ET0 L9ET1 L9ET2 L9ET3 L9ET4 L9ET5 L9ET6 L9ET7 L9ET8 L9ET9 L9EU0 L9EU1 L9EU2 L9EU3 L9EU4 L9EU5 L9EU6 L9EU7 L9EU8 L9EU9 L9EV0 L9EV1 L9EV2 L9EV3 L9EV4 L9EV5 L9EV6 L9EV7 L9EV8 L9EV9 L9EW0 L9EW1 L9EW2 L9EW3 L9EW4 L9EW5 L9EW6 L9EW7 L9EW8 L9EW9 L9EX0 L9EX1 L9EX2 L9EX3 L9EX4 L9EX5 L9EX6 L9EX7 L9EX8 L9EX9 L9EY0 L9EY1 L9EY2 L9EY3 L9EY4 L9EY5 L9EY6 L9EY7 L9EY8 L9EY9 L9EZ0 L9EZ1 L9EZ2 L9EZ3 L9EZ4 L9EZ5 L9EZ6 L9EZ7 L9EZ8 L9EZ9 L9FA0 L9FA1 L9FA2 L9FA3 L9FA4 L9FA5 L9FA6 L9FA7 L9FA8 L9FA9 L9FB0 L9FB1 L9FB2 L9FB3 L9FB4 L9FB5 L9FB6 L9FB7 L9FB8 L9FB9 L9FC0 L9FC1 L9FC2 L9FC3 L9FC4 L9FC5 L9FC6 L9FC7 L9FC8 L9FC9 L9FD0 L9FD1 L9FD2 L9FD3 L9FD4 L9FD5 L9FD6 L9FD7 L9FD8 L9FD9 L9FE0 L9FE1 L9FE2 L9FE3 L9FE4 L9FE5 L9FE6 L9FE7 L9FE8 L9FE9 L9FF0 L9FF1 L9FF2 L9FF3 L9FF4 L9FF5 L9FF6 L9FF7 L9FF8 L9FF9 L9FG0 L9FG1 L9FG2 L9FG3 L9FG4 L9FG5 L9FG6 L9FG7 L9FG8 L9FG9 L9FH0 L9FH1 L9FH2 L9FH3 L9FH4 L9FH5 L9FH6 L9FH7 L9FH8 L9FH9 L9FI0 L9FI1 L9FI2 L9FI3 L9FI4 L9FI5 L9FI6 L9FI7 L9FI8 L9FI9 L9FJ0 L9FJ1 L9FJ2 L9FJ3 L9FJ4 L9FJ5 L9FJ6 L9FJ7 L9FJ8 L9FJ9 L9FK0 L9FK1 L9FK2 L9FK3 L9FK4 L9FK5 L9FK6 L9FK7 L9FK8 L9FK9 L9FL0 L9FL1 L9FL2 L9FL3 L9FL4 L9FL5 L9FL6 L9FL7 L9FL8 L9FL9 L9FM0 L9FM1 L9FM2 L9FM3 L9FM4 L9FM5 L9FM6 L9FM7 L9FM8 L9FM9 L9FN0 L9FN1 L9FN2 L9FN3 L9FN4 L9FN5 L9FN6 L9FN7 L9FN8 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L9GE5 L9GE6 L9GE7 L9GE8 L9GE9 L9GF0 L9GF1 L9GF2 L9GF3 L9GF4 L9GF5 L9GF6 L9GF7 L9GF8 L9GF9 L9GG0 L9GG1 L9GG2 L9GG3 L9GG4 L9GG5 L9GG6 L9GG7 L9GG8 L9GG9 L9GH0 L9GH1 L9GH2 L9GH3 L9GH4 L9GH5 L9GH6 L9GH7 L9GH8 L9GH9 L9GI0 L9GI1 L9GI2 L9GI3 L9GI4 L9GI5 L9GI6 L9GI7 L9GI8 L9GI9 L9GJ0 L9GJ1 L9GJ2 L9GJ3 L9GJ4 L9GJ5 L9GJ6 L9GJ7 L9GJ8 L9GJ9 L9GK0 L9GK1 L9GK2 L9GK3 L9GK4 L9GK5 L9GK6 L9GK7 L9GK8 L9GK9 L9GL0 L9GL1 L9GL2 L9GL3 L9GL4 L9GL5 L9GL6 L9GL7 L9GL8 L9GL9 L9GM0 L9GM1 L9GM2 L9GM3 L9GM4 L9GM5 L9GM6 L9GM7 L9GM8 L9GM9 L9GN0 L9GN1 L9GN2 L9GN3 L9GN4 L9GN5 L9GN6 L9GN7 L9GN8 L9GN9 L9GO0 L9GO1 L9GO2 L9GO3 L9GO4 L9GO5 L9GO6 L9GO7 L9GO8 L9GO9 L9GP0 L9GP1 L9GP2 L9GP3 L9GP4 L9GP5 L9GP6 L9GP7 L9GP8 L9GP9 L9GQ0 L9GQ1 L9GQ2 L9GQ3 L9GQ4 L9GQ5 L9GQ6 L9GQ7 L9GQ8 L9GQ9 L9GR0 L9GR1 L9GR2 L9GR3 L9GR4 L9GR5 L9GR6 L9GR7 L9GR8 L9GR9 L9GS0 L9GS1 L9GS2 L9GS3 L9GS4 L9GS5 L9GS6 L9GS7 L9GS8 L9GS9 L9GT0 L9GT1 L9GT2 L9GT3 L9GT4 L9GT5 L9GT6 L9GT7 L9GT8 L9GT9 L9GU0 L9GU1 L9GU2 L9GU3 L9GU4 L9GU5 L9GU6 L9GU7 L9GU8 L9GU9 L9GV0 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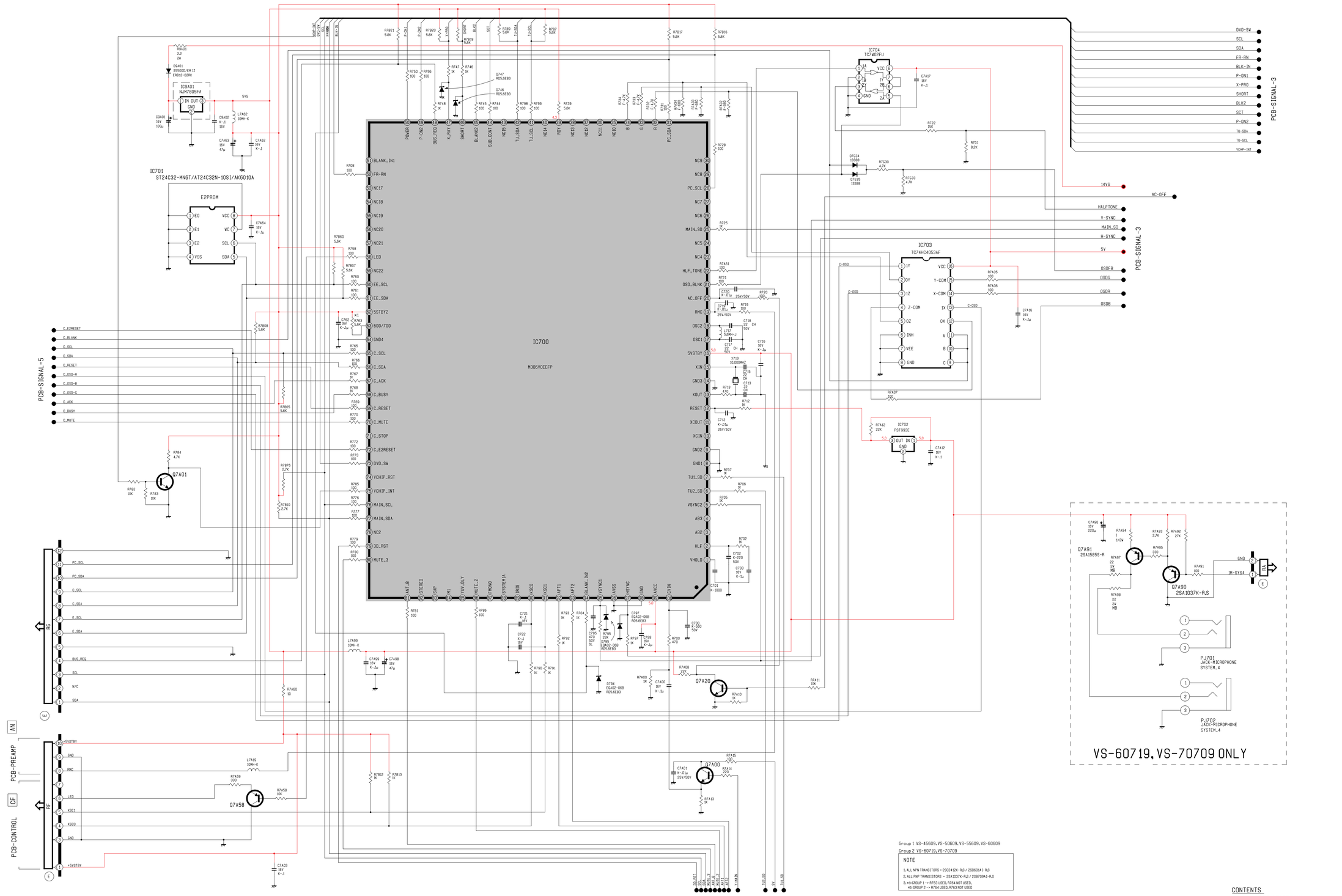
L9HL7 L9HL8 L9HL9 L9HM0 L9HM1 L9HM2 L9HM3 L9HM4 L9HM5 L9HM6 L9HM7 L9HM8 L9HM9 L9HN0 L9HN1 L9HN2 L9HN3 L9HN4 L9HN5 L9HN6 L9HN7 L9HN8 L9HN9 L9HO0 L9HO1 L9HO2 L9HO3 L9HO4 L9HO5 L9HO6 L9HO7 L9HO8 L9HO9 L9HP0 L9HP1 L9HP2 L9HP3 L9HP4 L9HP5 L9HP6 L9HP7 L9HP8 L9HP9 L9HQ0 L9HQ1 L9HQ2 L9HQ3 L9HQ4 L9HQ5 L9HQ6 L9HQ7 L9HQ8 L9HQ9 L9HR0 L9HR1 L9HR2 L9HR3 L9HR4 L9HR5 L9HR6 L9HR7 L9HR8 L9HR9 L9HS0 L9HS1 L9HS2 L9HS3 L9HS4 L9HS5 L9HS6 L9HS7 L9HS8 L9HS9 L9HT0 L9HT1 L9HT2 L9HT3 L9HT4 L9HT5 L9HT6 L9HT7 L9HT8 L9HT9 L9HU0 L9HU1 L9HU2 L9HU3 L9HU4 L9HU5 L9HU6 L9HU7 L9HU8 L9HU9 L9HV0 L9HV1 L9HV2 L9HV3 L9HV4 L9HV5 L9HV6 L9HV7 L9HV8 L9HV9 L9HW0 L9HW1 L9HW2 L9HW3 L9HW4 L9HW5 L9HW6 L9HW7 L9HW8 L9HW9 L9HX0 L9HX1 L9HX2 L9HX3 L9HX4 L9HX5 L9HX6 L9HX7 L9HX8 L9HX9 L9HY0 L9HY1 L9HY2 L9HY3 L9HY4 L9HY5 L9HY6 L9HY7 L9HY8 L9HY9 L9HZ0 L9HZ1 L9HZ2 L9HZ3 L9HZ4 L9HZ5 L9HZ6 L9HZ7 L9HZ8 L9HZ9 L9IA0 L9IA1 L9IA2 L9IA3 L9IA4 L9IA5 L9IA6 L9IA7 L9IA8 L9IA9 L9IB0 L9IB1 L9IB2 L9IB3 L9IB4 L9IB5 L9IB6 L9IB7 L9IB8 L9IB9 L9IC0 L9IC1 L9IC2 L9IC3 L9IC4 L9IC5 L9IC6 L9IC7 L9IC8 L9IC9 L9ID0 L9ID1 L9ID2 L9ID3 L9ID4 L9ID5 L9ID6 L9ID7 L9ID8 L9ID9 L9IE0 L9IE1 L9IE2 L9IE3 L9IE4 L9IE5 L9IE6 L9IE7 L9IE8 L9IE9 L9IF0 L9IF1 L9IF2 L9IF3 L9IF4 L9IF5 L9IF6 L9IF7 L9IF8 L9IF9 L9IG0 L9IG1 L9IG2 L9IG3 L9IG4 L9IG5 L9IG6 L9IG7 L9IG8 L9IG9 L9IH0 L9IH1 L9IH2 L9IH3 L9IH4 L9IH5 L9IH6 L9IH7 L9IH8 L9IH9 L9II0 L9II1 L9II2 L9II3 L9II4 L9II5 L9II6 L9II7 L9II8 L9II9 L9IJ0 L9IJ1 L9IJ2 L9IJ3 L9IJ4 L9IJ5 L9IJ6 L9IJ7 L9IJ8 L9IJ9 L9IK0 L9IK1 L9IK2 L9IK3 L9IK4 L9IK5 L9IK6 L9IK7 L9IK8 L9IK9 L9IL0 L9IL1 L9IL2 L9IL3 L9IL4 L9IL5 L9IL6 L9IL7 L9IL8 L9IL9 L9IM0 L9IM1 L9IM2 L9IM3 L9IM4 L9IM5 L9IM6 L9IM7 L9IM8 L9IM9 L9IN0 L9IN1 L9IN2 L9IN3 L9IN4 L9IN5 L9IN6 L9IN7 L9IN8 L9IN9 L9IO0 L9IO1 L9IO2 L9IO3 L9IO4 L9IO5 L9IO6 L9IO7 L9IO8 L9IO9 L9IP0 L9IP1 L9IP2 L9IP3 L9IP4 L9IP5 L9IP6 L9IP7 L9IP8 L9IP9 L9IQ0 L9IQ1 L9IQ2 L9IQ3 L9IQ4 L9IQ5 L9IQ6 L9IQ7 L9IQ8 L9IQ9 L9IR0 L9IR1 L9IR2 L9IR3 L9IR4 L9IR5 L9IR6 L9IR7 L9IR8 L9IR9 L9IS0 L9IS1 L9IS2 L9IS3 L9IS4 L9IS5 L9IS6 L9IS7 L9IS8 L9IS9 L9IT0 L9IT1 L9IT2 L9IT3 L9IT4 L9IT5 L9IT6 L9IT7 L9IT8 L9IT9 L9IU0 L9IU1 L9IU2 L9IU3 L9IU4 L9IU5 L9IU6 L9IU7 L9IU8 L9IU9 L9IV0 L9IV1 L9IV2 L9IV3 L9IV4 L9IV5 L9IV6 L9IV7 L9IV8 L9IV9 L9IW0 L9IW1 L9IW2 L9IW3 L9IW4 L9IW5 L9IW6 L9IW7 L9IW8 L9IW9 L9IX0 L9IX1 L9IX2



Group 1 VS-45609, VS-50609, VS-55609, VS-60609
Group 2 VS-60719, VS-70709

NOTE

1. ALL NPN TRANSISTORS = 2SC2412K-R,S / 2SD601A1-R,S
2. ALL PNP TRANSISTORS = 2SA1037K-R,S / 2SB709A1-R,S
3. ※1:GROUP 1 → R763 USED, R764 NOT USED.
   ※1:GROUP 2 → R764 USED, R763 NOT USED

CONTENTS

P6.1	BLOCK DIAGRAM	VS-45609
P6.2	MAIN	VS-50609
P6.3	SIGNAL-1 (MICRO)	VS-55609
P6.4	SIGNAL-2 (AV/IO)	VS-60609
P6.5	SIGNAL-3 (VCJ/PIP)	VS-60719
P6.6	SIGNAL-4 (CRT DRIVE/APERTURE)	VS-70709
P6.7	SIGNAL-5 (CONV)	
P6.8	CRT / CONTROL / TERMINAL / PREAMP / DBF	

ANT SEL	BS	RF PATH
H	5V	ANTB->MAIN-TU ANTA->SUB-TU
L	0V	ANTA->MAIN-TU ANTB->SUB-TU

IC2C01
UPD640B2

IC2C02
MSM54V16258B/BSL

IC2K01
CXA2069Q
A/V SWITCH

IC3A01
TDA9855
AUD. PROCESSOR
ST/SAP DECODER

IC3D01
LA4663

IC2E00
BA7046F

Q2A01 2SA1037K-R,S /2SB709A1-R,S
Q2A02 2SC2412K-R,S /2SD601A1-R,S
Q2A04
Q2B01
Q2B02
Q2B04 2SA1037K-R,S /2SB709A1-R,S
Q2C01 2SC2412K-R,S
Q2D06
Q2D05
Q2D09
Q2D08
Q2D07
Q2D16
Q2D15 2SA1037K-R,S
Q2D14 2SC2412K-R,S
Q2D17 2SA1037K-R,S
Q2E00
Q2K70
Q2K90
Q2K89
Q6Y10
Q6Y11
Q6Y12
Q7S01

TU1A01
TU1B01
TUNER1
TUNER2
RF SWITCH

TP10A
TP11A
TP11B
TP12A
TP12B
TP14A
TP15A

X2031
20.000MHz

AV1
AV2
PCB-TERMINAL
PCB-SIGNAL-1
PCB-SIGNAL-3
PCB-MAIN
PCB-FRONT
SPEAKERS
DP
CE

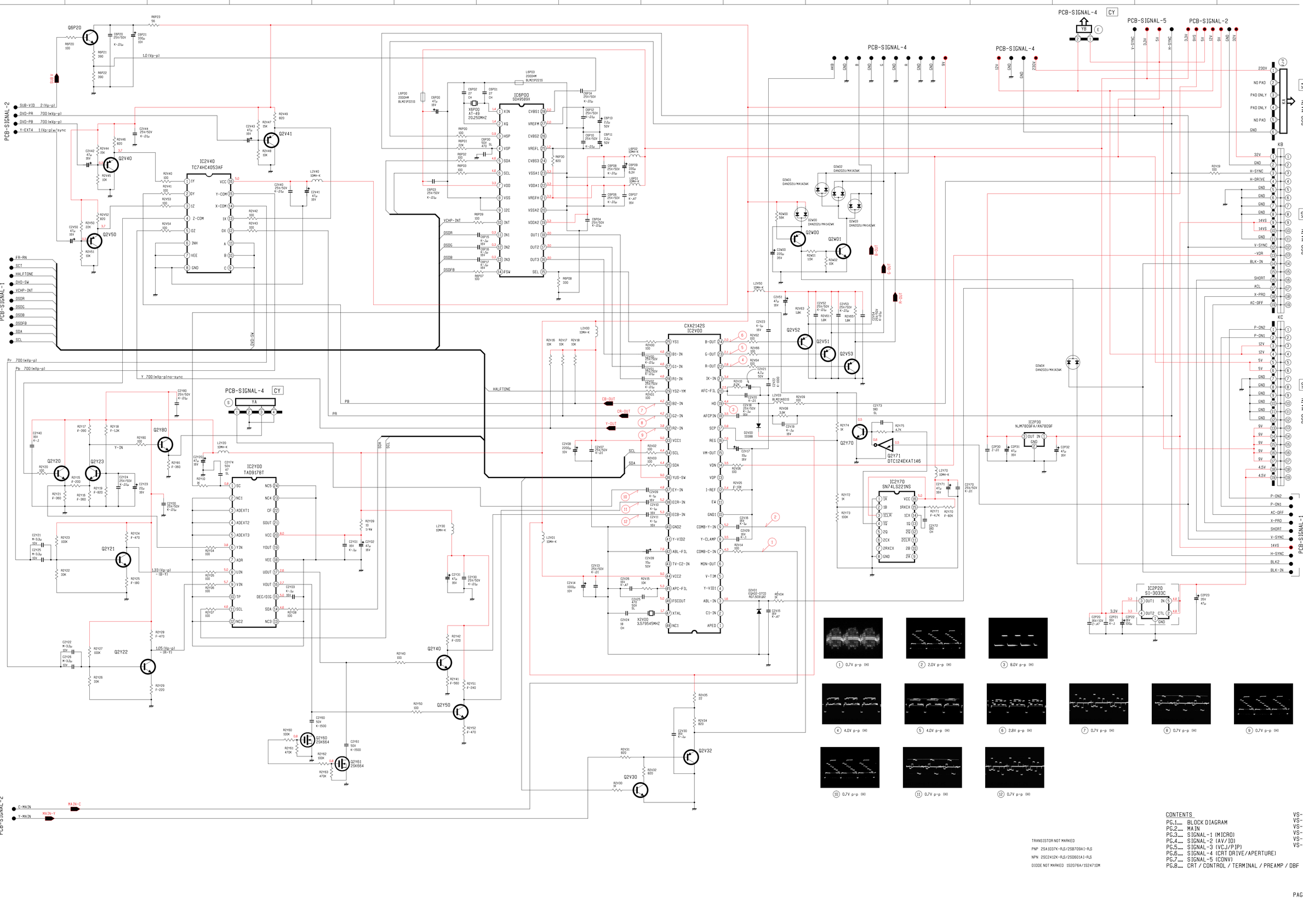
1 1.2V p-p (H)
2 2.2V p-p (H)
3 2.3V p-p (H)
4 1.4V p-p (H)
5 1.1V p-p (H)
6 1.1V p-p (H)
7 1.2V p-p (H)
8 1.2V p-p (H)

TRANSISTOR NOT MARKED
PNP 2SA1037K-R,S/2SB709A1-R,S
NPN 2SC2412K-R,S/2SD601A1-R,S

DIODE NOT MARKED
ZENER EQA02-07CD/RD7.5EB1,B2

CONTENTS
PG.1.... BLOCK DIAGRAM
PG.2.... MAIN
PG.3.... SIGNAL-1 (MICRO)
PG.4.... SIGNAL-2 (AV/ID)
PG.5.... SIGNAL-3 (VCJ/PIP)
PG.6.... SIGNAL-4 (CRT DRIVE/APERTURE)
PG.7.... SIGNAL-5 (CONV)
PG.8.... CRT / CONTROL / TERMINAL / PREAMP / DBF

VS-45609
VS-50609
VS-55609
VS-60609
VS-60719
VS-70709



CONTENTS

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PG.3.... SIGNAL-1 (MICRO)
PG.4.... SIGNAL-2 (AV/IO)
PG.5.... SIGNAL-3 (VCJ/PIP)
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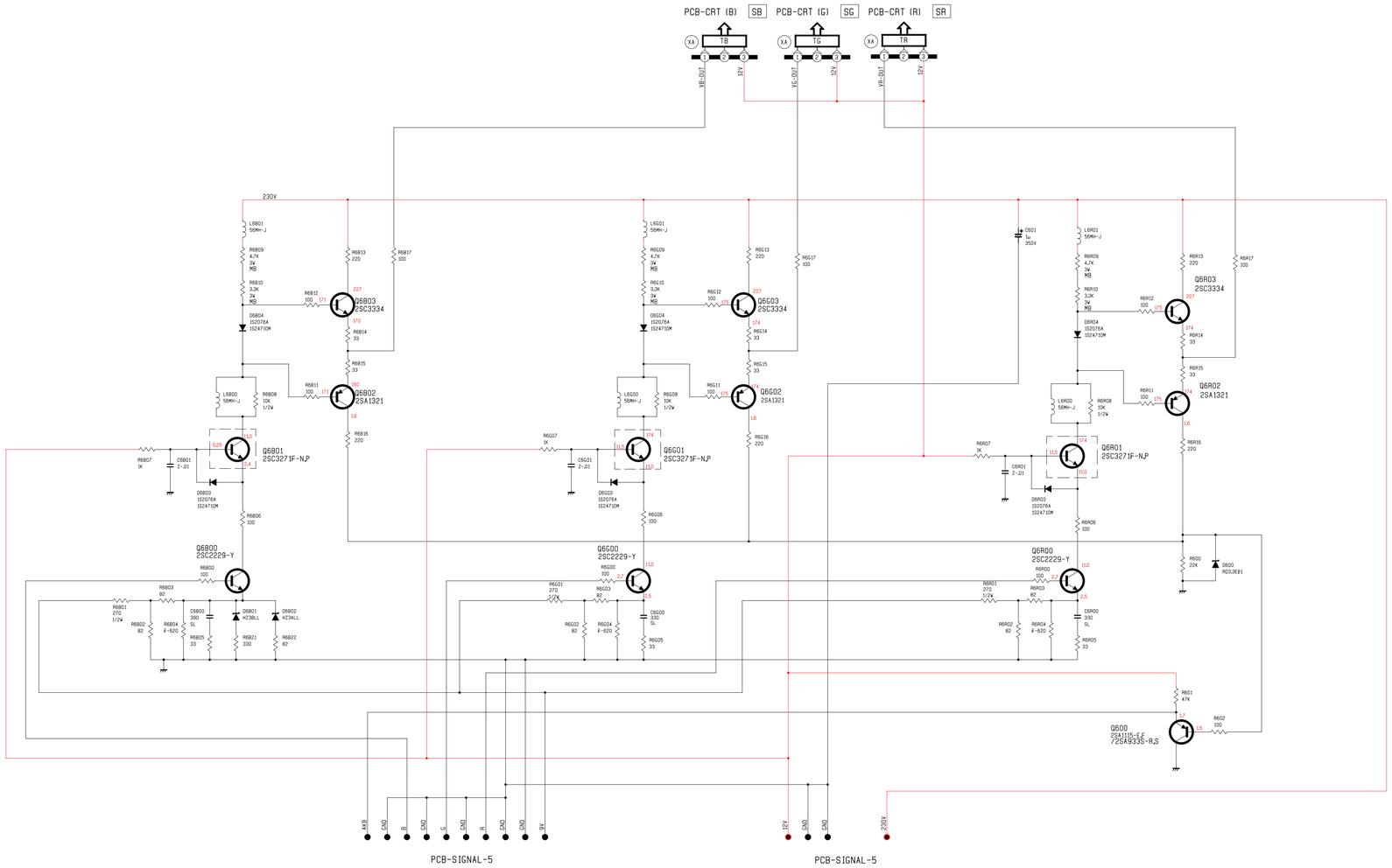
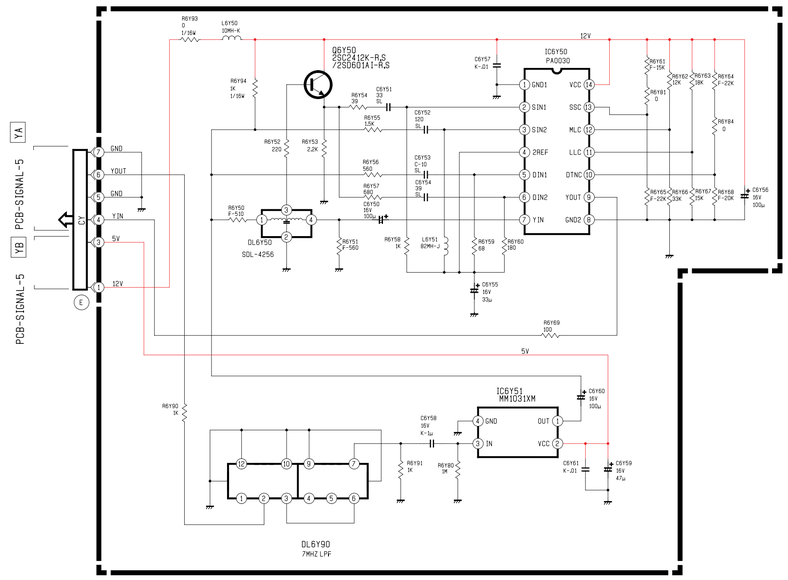
PG.7.... SIGNAL-5 (CONV)
PG.8.... CRT / CONTROL / TERMINAL / PREAMP / DBF

VS-45609
VS-50609
VS-55609
VS-60609
VS-60719
VS-70709

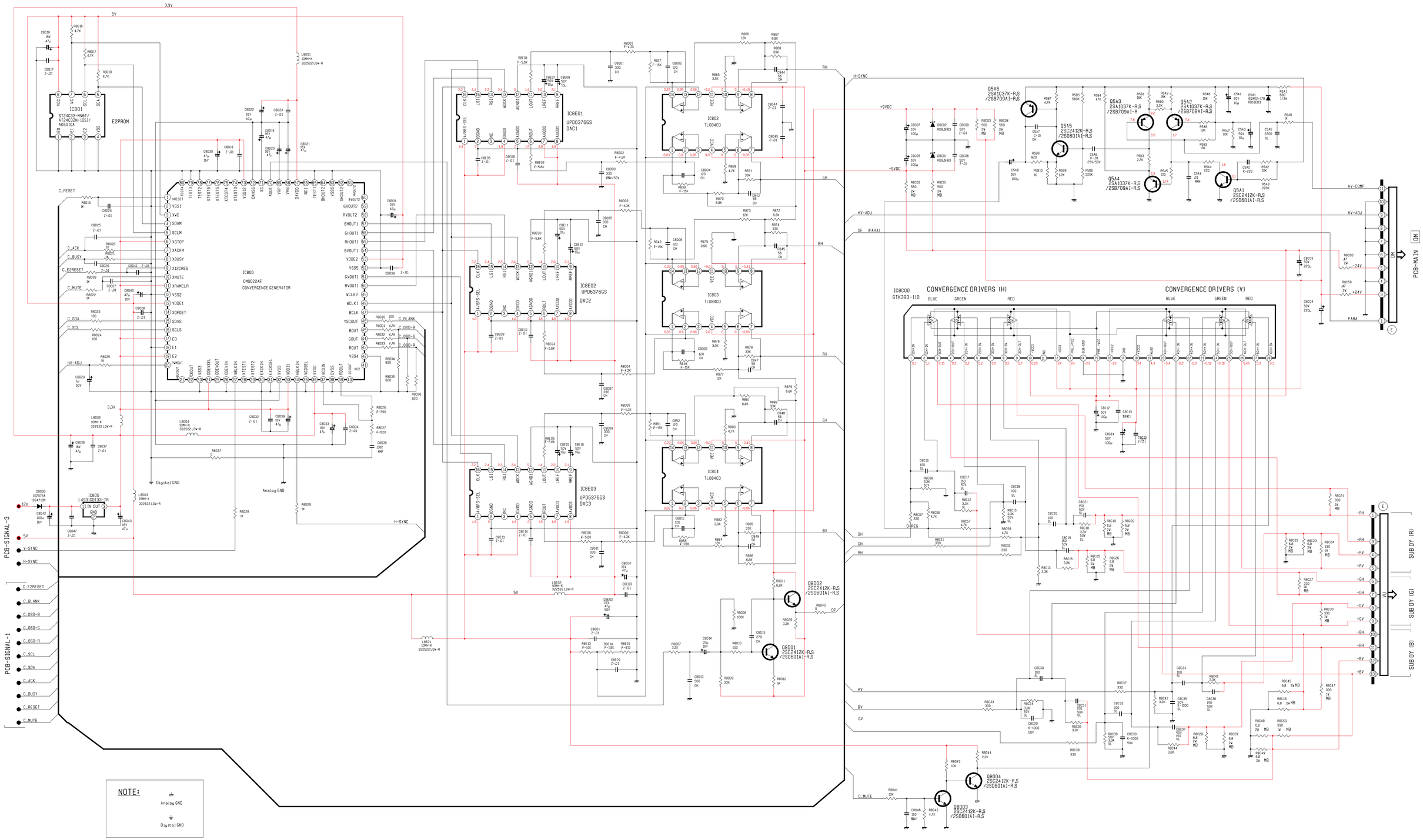




CONTENTS

PG.1.... BLOCK DIAGRAM
PG.2.... MAIN
PG.3.... SIGNAL-1 (MICRO)
PG.4.... SIGNAL-2 (AV/IO)
PG.5.... SIGNAL-3 (VCJ/PIP)
PG.6.... SIGNAL-4 (CRT DRIVE/APERTURE)
PG.7.... SIGNAL-5 (CONV)
PG.8.... CRT / CONTROL / TERMINAL / PREAMP / DBF

VS-45609
VS-50609
VS-55609
VS-60609
VS-60719
VS-70709



CONTENTS

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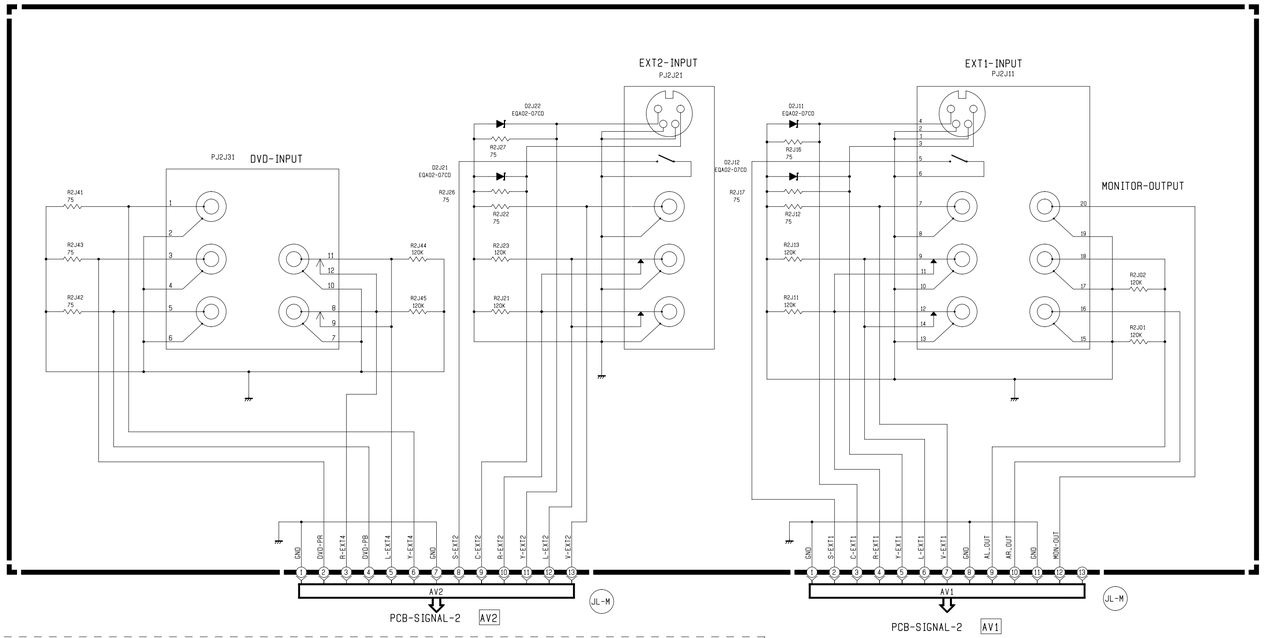
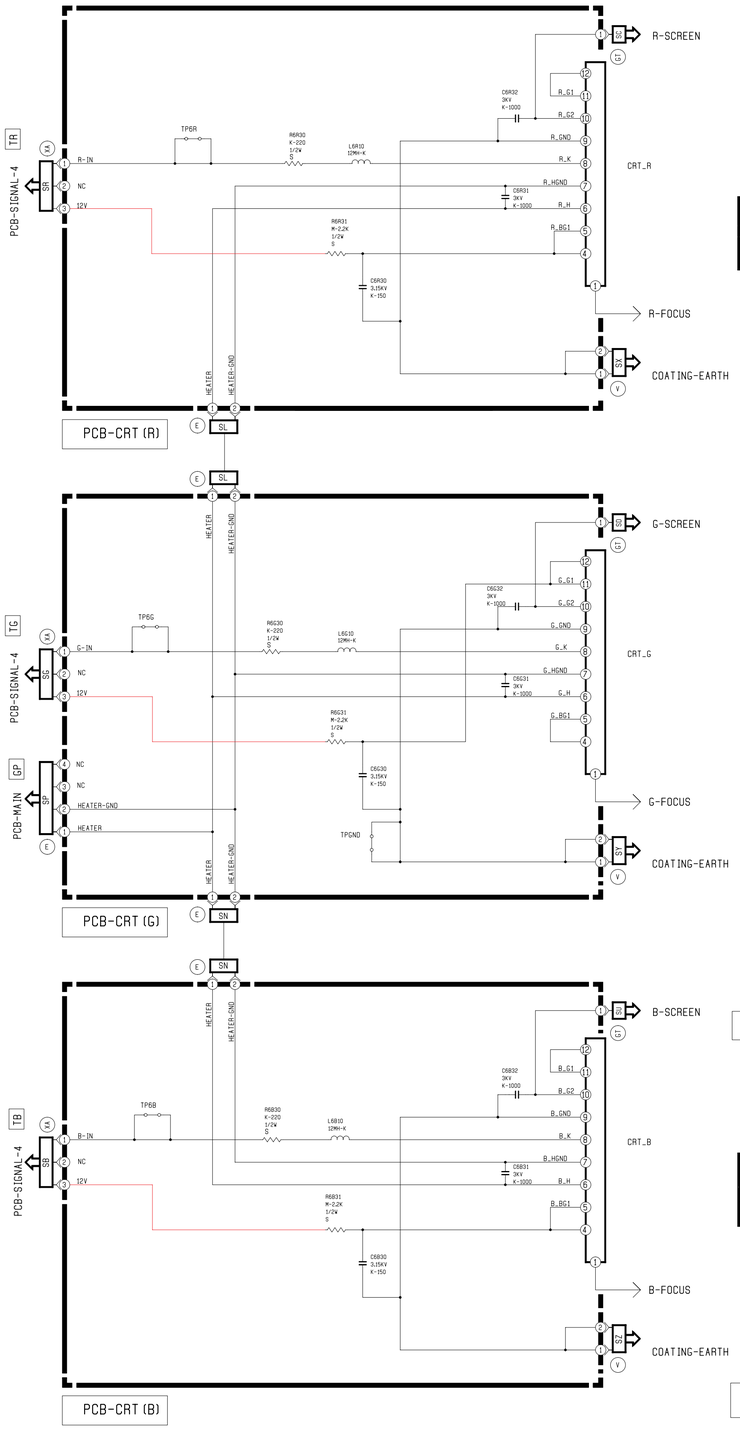
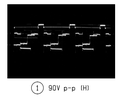
PG.6....	SIGNAL-4 (CRT DRIVE/APERTURE)	VS-70709
PG.7....	SIGNAL-5 (CONV)	
PG.8....	CRT / CONTROL / TERMINAL / PREAMP / DBF	

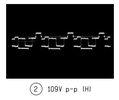
PCB-TERMINAL





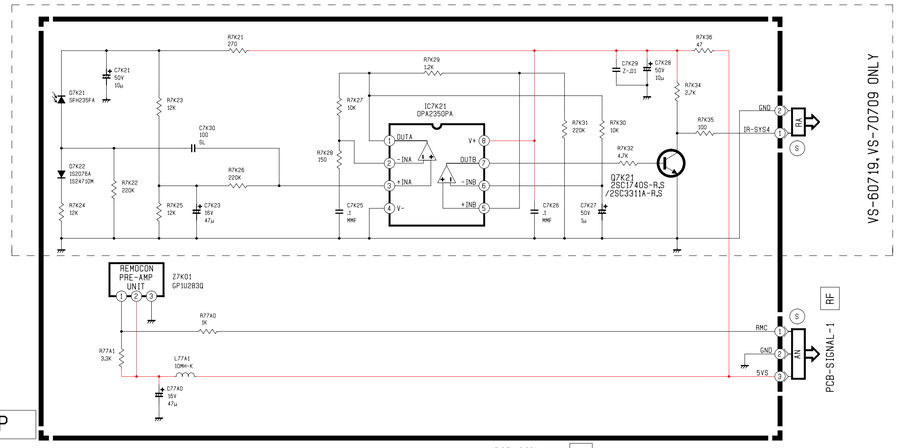


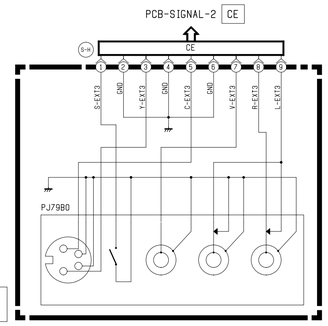
1 90V p-p (H)

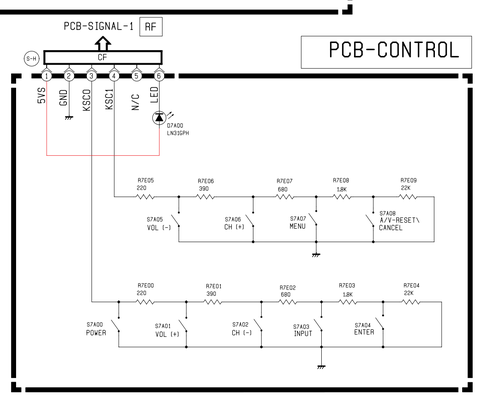


2 109V p-p (H)

3 114V p-p (H)







Group 1 VS-45609, VS-50609, VS-55609, VS-60609
Group 2 VS-60719, VS-70709

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